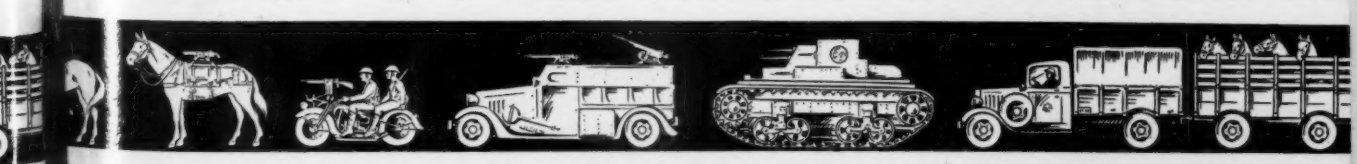
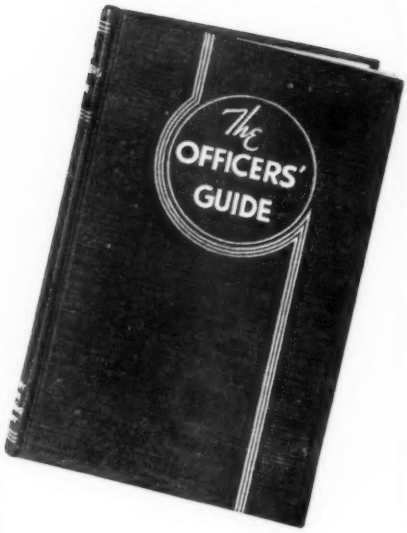
THE CAVALRY JOURNAL



MARCH-APRIL, 1941

THE OFFICERS' GUIDE



Fourth Edition, Second Printing

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1624 H Street, N.W. Washington, D. C.

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The aim and purpose of the Association shall be to disseminate knowledge of the military art and science, to promote the professional improvement of its members, and to preserve and foster the spirit, the traditions, and the solidarity of the Cavalry of the Army of the United States.—Article III of the Constitution.

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General Headquarters

Where It Fits Into the Present Expansion of Our Military Forces

By Lieutenant Colonel C. H. Gerhardt, G.S.C.

IN July, 1940 orders were issued for Major General Lesley J. McNair and several others to initiate the organization of General Headquarters, U. S. Army. Subsequent to that time the staff has been augmented to its present strength of 20 officers and 24 enlisted men. The initial directive by the War Department stated that decentralization was desired and that, initially, GHQ would be concerned with the direction and supervision of training of all military forces except overseas garrisons, and that close coöperation was desired between GHQ, the War Department General Staff and the Chiefs of Arms and Services. At the present time General Marshall, in his capacity as Chief of Staff, heads the War Department and in his capacity of Commanding General of GHQ also heads the initial set-up for troops in the field. He combines in his two jobs those duties performed by General Pershing and General March during the World War.

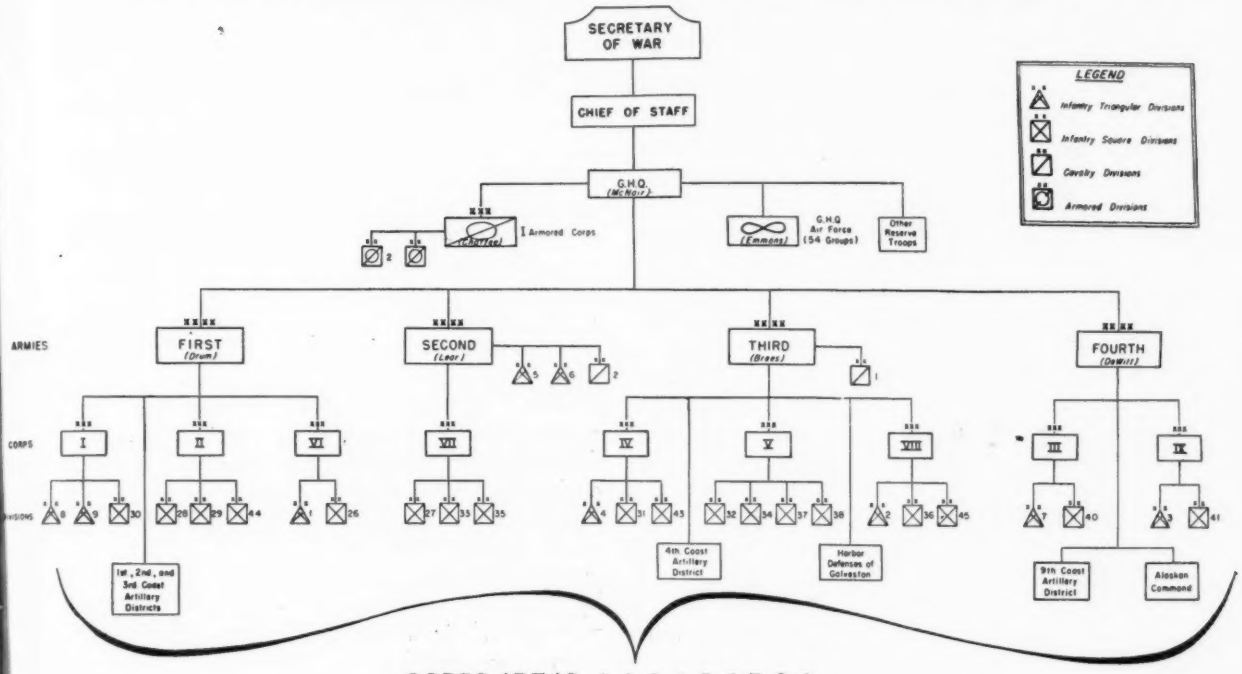
Major General Lesley J. McNair

According to tables of organization the full set-up for GHQ runs to 156 officers, 17 of whom are general officers and 355 enlisted men. At present GHQ comprises the training section of G-3, GHQ and in order to simplify contact with the War Department various officers have been assigned principal liaison duties with the various sections of the War Department, the Arms and Services. General McNair felt some such organization would be necessary in order to avoid much duplication of effort.

From the first, General McNair has felt that the essence of army training lies in well trained battalions and has planned on tests of these battalions and similar organizations by the GHQ staff, these tests to be highly practical and to be so arranged as to lead to factual answers as to the state of training of the various units. As of necessity, these tests could not be given until troops had an opportunity for training. The first duties of GHQ, therefore, in connection with the induction of the National Guard and other expansion of the field forces, was to visit these forces prior to induction and also in the field to learn their problems and see that matters were proceeding according to plan. The data thus assembled were of great value to the War Department; and as General McNair's basic idea was to have the members of his staff visit only those units with which they were concerned, and for a definite purpose, no time nor effort was wasted by indiscriminate visiting. Every visit of GHQ personnel has been planned to assist either the troops visited or others to be inducted at a later date. The initial decision as to the training of our military forces was to avoid some of the errors of previous expansions and to put into effect a highly centralized form of training.

All newly organized Regular Army units and inducted National Guard units were required to follow a 13 weeks schedule embracing basic, technical, and tactical training. Subsequent to this 13 weeks, a 12 weeks program for combined training was presented. The next major problem was the training of Selective Service

Tactical Organization of the Army



CORPS AREAS—1, 2, 3, 4, 5, 6, 7, 8, 9.
Responsible, under War Department, for supply and housekeeping of all troops.
Directly in control of Corps Area Service Commands, including 17 of the 21 Replacement Centers (averaging 11,000 men each) to be organized during next three months.
Overseas garrisons not included.

personnel, some of whom went direct to units and others to Replacement Centers. These individuals were given a 12 weeks schedule of training.

The maximum benefit from the above system could be had out of a few well-trained instructors, due to its centralization. Troops at the end of the training period were to be hardened and fit for extended field duty and to be inculcated with the *offensive spirit and maximum mobility*.

General McNair is a man of extremely varied background. He was a member of the similar group in the World War; has served as assistant commandant of the Field Artillery School; as commandant of the Command and General Staff School, and as Chief of Staff of the PID (Proposed Infantry Division) during the tests of this division, which resulted in the adoption of the triangular set-up for the Regular Army Divisions. He is a general officer who is not averse to detailed work himself and is able to get full value out of his background.

General McNair feels that horse cavalry must prove its value, today, in the Combat Team of the Army of the United States. Maneuvers to be held this summer are planned so that cavalry divisions will have an opportunity to maneuver against triangular, motorized and armored divisions and corps. With General McNair's factual background he will see that these maneuvers answer some very pertinent questions.

* * *

My personal opinion of the situation, as far as the Cavalry is concerned, is as follows: Our battlefield mobility is still unsurpassed by any other arm. Our strategic mobility has shrunk considerably in comparison with troops who are completely motorized or able to shuttle. The cavalry soldier is as good as any in our army for the simple reason he has such a diverse life with plenty of hard manual labor. In addition, he has that exaltation of spirit that seems to come only to a man on a horse.

Regardless of the answer this summer, to the questions asked, the Cavalry's main mission is to do its best for the betterment of the armed forces of the United States, and it is up to each officer and NCO to so perfect his command that our characteristics of mobility—firepower—surprise and leadership are apparent to all.

A Cavalryman's Thoughts

By Lieutenant Colonel J. T. Pierce, Cavalry

SINCE primitive man first reached down for a stone to hurl at his adversary, always the search has been for something new and startling with which to overcome, quickly and completely, the opposing hostile tribe or nation. So that in turning the pages of history there passes in review a series of innovations created by this tribe or that nation which enabled it for some brief historical period to be supreme among its neighbors. For instance, the chariot had made Darius supreme until Alexander introduced a new method of fighting them, and after Arabela the phalanx was believed to be invincible. And so on through other, newer means or methords such as the devastating wars by paralysis of Genghis Khan, the introduction of the rifle and cannon to the battlefield, the machine gun, poison gas, tanks, airplanes, and now the Blitzkrieg. (To name a few.)

Where such innovation was believed in thoroughly, and consequently effectively used, the result has generally been complete and disastrous to the unprepared or disbelieving foe. The introduction of the means and methods of Genghis Khan, and of their modern application in the Blitzkrieg furnish us two excellent examples of this. But, conversely, where such innovation was not believed in thoroughly, and consequently ineffectively used, the result has generally been indecisive and a period of stalemate has resulted permitting the unprepared opponent the opportunity for necessary countermeasures. The first military usage of poison gas and of tanks on modern battlefields provide us with two excellent examples of this latter.

The overwhelming initial successes of the Blitzkrieg as demonstrated by the Nazis, therefore, has provided a few pages for the future historian, but has added nothing to the record to surprise the future military student. On the contrary, the future military student is more apt to be amazed at any successes attained with the means and methods used when he knows the means and methods available to their opponents. For Time will have lifted the fog of obscurity put down by propaganda and censorship. The arms, equipment, methods, moves and countermoves of the opposing players will be clearly seen, and proper relative values to these factors can be easily assigned.

But the contemporary military student can get no such clear picture, and, in his effort to assign proper relative values to the factors involved, has to rely on his deductions from the few and scattered items of factual information his diligent research uncovers—as influenced by his training, experience, knowledge of the history and men and modern machines, and his analytical ability. As a consequence he hesitates to draw conclusions at this stage for fear that in his study he has accepted as facts items of propaganda, that he has excluded other items as propaganda which actually were facts, that he has assigned unmerited weight or importance to available factual items, or that he has been influenced too much by his own ideas, or his limited training and experience.

It is believed, however, that sufficient basic data are now available to enable us to draw a few sound conclusions. First, that the Nazi war machine was conceived, armed, organized, equipped, and trained for a definite purpose for operations under known conditions on known terrain. Second, that the Blitzkrieg has offered nothing new, being merely a modern adaptation of old methods, with the possible exception of the scientific sapping and undermining of the opponents' will by use of mass psychology. Third, that the effectiveness, and relative importance to the total effect, of the German armored force has been over-emphasized and much advertised for propagandistic purposes and because of the limitations placed by the censorship on foreign-press correspondents.

It is believed that the singleness of purpose demonstrated throughout the period of Nazi domination of Germany up to the start of the invasion of Poland; the ideals and purposes published in *Mein Kampf;* the test-trials in Spain and Austria; the thoroughness and completeness of the conversion of the German nation into a war-making machine; the steps taken to guard the secrecy of the size, strength, equipment, and condition of the German army and of the German nation's war-making machinery; the results accomplished since the invasion of Poland started; the released statements of Nazi officials—civil and military—during the past year; the slowly-developing picture of the actual actions of the Nazi offensive moves and the actual—if any—countermoves of their defensive opponents; the rumors of ineffective and near-disastrous attempts to adjust their war-machine to the changed existing situation; the actual existence of a stalemate since the fall of France—all tend to establish and support our first conclusion. No small part of the success accomplished can be placed on the whole-hearted belief of Nazi officials—high and low, civil and military—in the soundness of the means and methods created for the purposes at hand. Half-hearted believers or disbelievers were eliminated.

As to our second conclusion, it is believed that students of military history and of technical advances will agree with us without comment except on the qualification to the conclusion. To us it appears that the Blitzkrieg in its application merely utilized modern techni-

cal advances and the lessons of wars of the past to attain the military ideal of allowing a superior infantry to reach its enemy with its complete strength still unimpaired. As a consequence, small local initial successes were quickly developed by an alert command into important strategical successes which likewise were exploited swiftly into a relentless pursuit. That the scientific use of mass psychology sapped and undermined the will of the opponents, and that it made possible the initial successes of the German army, there can be little doubt. But as to whether or not this was a new element that rounded-out the Blitzkrieg, there may be some argument. For to us the methods appear to follow closely the practices of Genghis Khan and his successors. Or, even of Sun Tzu, who wrote about 500 B.C.: "Whether the object be to crush an army, to storm a city, or to assassinate an individual, it is always necessary to begin by finding out the names of the attendants, the aides-de-camp, the door-keeper and sentries of the guard in command. Our spies must be commissioned to ascertain these."

We may be "sticking our neck out" on our third conclusion as it may be based more on our convictions than on the weight of evidence. But it is believed that the factual data which have become available make it a sound deduction, and that as additional data become available its soundness will be further substantiated. One competent military observer who witnessed the Nazi machine over-run France has remarked that the German army could have gone as fast and as safely after the "breakthrough" in unarmored passenger cars, as hardly a hostile shot was fired at it!

Logically, then, where does all this leave us and what are we going to do about it? It seems to us that the key lies in the word "logically." We must not succumb to the propaganda which is being put out with a definite idea in view, nor must we swallow "raw" all the information purporting to be factual accounts. Nothing has yet occurred, for which there is sufficient reliable information to substantiate it, that disproves the effectiveness of our weapons when they are operated by men who believe in them, know how to control their effect, and are willing to serve them at the risk of their lives. This, then, is our first and outstanding mission—Training. And *quality* of training rather than *quantity*. The commander of every unit and all subordinate officers must keep this objective ever in mind and must *know* what they are going to teach before they demand exertion of their men. This demands careful planning, tedious preparation and coördination—off the drill field or maneuver area. But it is the only way to secure quality of training for combat. "More thinking in the office, less lifting in the shop" has been attributed to Henry Ford, but it could well head our training directive!

We must proceed carefully in making changes in organization or tactical doctrines based on supposed requirements for change as indicated by "lessons" from the recent operations in Europe, if we accept as sound the reasoning for the conclusions heretofore advanced. Our problem is entirely different to start with, and in the second place, if we adopt those lessons to the extent of copying, we will be in the position of preparing for the *last war*, not the *next* one! Neither must we resist needed changes because of any unwillingness to change, or because of a lack of vision. Rather, we should assume an attitude of eagerness to change and search for new ideas. Let's try things now while there is time. Of course the final test of military innovations is war itself, but much of value might be found in the laboratory of the maneuver area—if we approach it with an open mind.

It is believed that this applies particularly aptly to us in the Cavalry, and that the opportunity is here for a modern cavalryman and a modern cavalry to meet the challenge.

★ ★ ★

Novelty and surprise throw an enemy into consternation; but common incidents have no effect.—VEGETIUS.

Cavalry Replacement Center

By Lieutenant Colonel Wayland B. Augur, Cavalry*

TREMENDOUS military activity is to be seen everywhere in the country at the present time. Innumerable agencies are engaged in building up and training a military force which will insure an adequate defense. One of the busiest of these is the Cavalry Replacement Center at Fort Riley, Kansas.

This unit, at the present writing, is completing arrangements to receive and start the training of its initial contingent of approximately fifty-four hundred Selective Service Trainees. By the time this article appears in print the first real hurdle will have been taken and the camp will be in full swing.

Previous articles have already appeared in The CAVALRY JOURNAL and other widely read military publications explaining the general scheme of organization and operation of the Replacement Center. This article will attempt to close gaps left in the earlier articles and to fill in a background of items believed to be of general interest to the Cavalry service.

The huge camp that has mushroomed in the Republican Flats area at Fort Riley since the middle of December, is a miracle of American energy and accomplishment. Commendations must go to the Widmer Engineering Company and to Long-Manhattan-Watson, the construction company, that together, under the supervision of the Constructing Quartermaster, have accomplished this seemingly impossible task within the time limit. There was, to make the task more difficult, an initial delay of several weeks through no fault of their own.

Conversation with various individuals, from Superintendents to carpenters' helpers, has divulged the presence of a large number of veterans of the last World War. They have uniformly adopted the attitude that this job, turned out on time and in good shape, *is their part* in the present emergency.

Many comments are heard comparing the present well built barracks; mess halls and other buildings, with the poorer class of similar type military buildings constructed during 1917-18. The buildings at the Cavalry Replacement Center are of an experimental type. They have metal sheeting on the exteriors, metal window frames and an additional wall insulation that is a distinct improvement over the wooden mobilization type building being constructed at most other Army camps. The buildings are much less of a fire hazard than buildings of the all-wooden type. This has been demonstrated already in a few minor fires that occurred during construction. Another modern improvement found in the buildings is the thermostatic, gas operated heaters with sheet metal heat ducts leading to all rooms. These not only provide an automatic system for distributing heat, but can be used in hot weather for air-cooling purposes by reversing the electric fan-blowers. This will be a definite advantage during the periods of extreme temperature that sometimes visit Fort Riley. Thus, this year's trainees will be living in the lap of luxury in comparison with conditions citizen soldiers found at military camps twenty-three years ago.

For those who are familiar with the Fort Riley Reservation, it will be easy to place in their mind's eye the location of the camp by visualizing its area as extending generally from the vicinity of the steeple-chase race track at the southeast end of camp, to the polo bungalow near the northwest corner of the area. The eastern portion of the camp is given over to barracks for the motor units and the two colored training troops. The western half of the area houses the horse units, the weapons department, quartermaster utility and warehouse areas.

A dike, between seven and nine feet high, is being built around the camp area. The dirt bank begins at the mouth of Breakneck Canyon, extends between camp and the Republican River, and ends at the high ground near the entrance to Governor Harvy Canyon. Drainage from the hills north of camp is diverted by ditches running outside the diked area. This precautionary measure will be heartily endorsed by those who remember the spring floods of the year 1935. The dike will give protection from the high water mark of that year which as far as we know was an all time record.

Approximately three hundred of the three hundred forty odd buildings approved for construction will be ready for occupancy when the camp receives trainees on March 15. The general plan of construction and the camp layout corresponds quite closely to that which is being used in many other Replacement Center camps. Blocks of barracks and mess halls, each adequate to house about 2,000 men, are placed at the corners of the large parade ground area. Camp Headquarters and headquarters troop buildings are centrally located on the north edge of camp. Recreational buildings, consisting of a War Department Theater, a recreation hall to be used for centralized religious services and as a

*The author was assisted by Lieutenant William P. Jones, Jr., Cavalry Assistant S-2, Cavalry Replacement Center.

Camp area on February 28th. Stable areas under construction are in the foreground. Post of Fort Riley is in upper right corner.

library, and a service club, are conveniently located near the center of the parade ground area. Post exchange buildings, dispensaries, administration buildings and class rooms are likewise provided for in each of the three main blocks of barracks. The fourth block being only one-half the size of the others does not have a separate post exchange or dispensary.

It is very fortunate that roads and walks have been completed throughout most of the area, for a recent curtailment of funds has caused the reduction of such installations.

Administrative buildings such as a post office, fire station, telephone exchange, quartermaster utilities and a guest house go to make the Replacement Center a community that is almost self-sufficient.

Practically every Cavalry unit and agency in our Army has contributed its share to the building of this organization.

To the Office of the Chief of Cavalry and the Cavalry School fell the important task of planning tables of organization, making up accompanying tables of basic allowances, drawing detailed plans to house, administer and train a total of over seven thousand men at a time, and the drafting of the Mobilization Training Plan for the instruction of these recruits.

The personnel of the Cavalry Replacement Center is representative of the entire Cavalry service. All regular organizations, with the exception of the Philippine Scouts, have been called upon to send cadres. These are being kept intact in so far as it is possible, to the end that men trained by the 11th Cavalry will go to the 11th Cavalry when their course of instruction is completed, and similarly men trained by the 4th Cavalry cadre will go to Fort Meade. The officer personnel has come largely from civilian life. Of the 169 officers, only ten are regulars. In all, they represent thirty-two regular and reserve organizations.

It is a matter of general interest that the reserve officer personnel comes from 70 colleges and universities. The five of these that have contributed most officers to the organization, are: Norwich University, University of Arizona, Virginia Military Institute, University of Illinois and the University of Pennsylvania.

The remount service has given its share of effort to our development in that 800 of the 1,600 animals have come from remount depots. Fort Reno and Fort Robinson have each sent 400 remounts, carefully selected for duty at the Replacement Center.

In addition to the remounts, 800 seasoned horses have been shipped here from the various Cavalry organ-

izations. The 1st Cavalry Division, the 2nd, 3d, 4th, 6th, 11th and 14th Cavalry regiments, have all sent their quotas.

Preparation for the opening of the Cavalry Replacement Center has progressed through the following phases:

a. General planning by the War Department.

b. Detailed planning of organization, camp layout, special tables of allowances, etc., by the office of the Chief of Cavalry, assisted by the Cavalry School.

c. Designation of the Executive Officer and S-3 to continue the task of putting the adopted plans into actual operation.

d. Arrival of other regular officers during first week in January and the movement of the temporary headquarters from the Post Headquarters building to Camp Whitside.

e. Reserve officers' arrival and beginning of refresher course on January 20th.

f. First block of thirty-three buildings in the Republican Flats area formally received by the Army on February 11th.

g. Arrival of enlisted Cadre on February 15th.

h. Cadre training begun February 17th.

The author as executive officer and Major Alexander George as S-3 arrived at Washington, D. C. on December 2, 1940, for temporary duty at the office of the Chief of Cavalry to become oriented in their new duties. By December 16th a nucleus of nine regular Army officers had been selected to fill key positions in the new organization, and the Executive Officer and the Plans and Training Officer had reached Fort Riley to start functioning in their respective capacities. Since the first of the year each of the successively arriving groups has thrown its shoulder to the wheel to start the juggernaut rolling.

The establishment of Replacement Centers for the initial training of our citizen army during the present mobilization, will avoid much of the inefficiency in building up the large armed forces that obtained during the early months of World War I. It was not until March, 1918, that the War Department decided upon the Replacement Center scheme of training. Prior to that time the arrival of replacements for men who were casualties in battle was a hit or miss proposition. They rarely ever arrived on time, and when they did get to France their number was usually insufficient.

Witness the cablegram sent to the War Department by General Pershing dated August 16, 1917:

"Attention is especially invited to the very great shortage in arrivals of replacements heretofore requested. Situation with reference to replacements is very acute. Until sufficient replacements are available in France, to keep Divisions at full strength, replacements should by all means be sent in preference to new divisions."

The War Department responded by sending still more divisions. Finally on November 2, a cablegram was sent inviting attention of the War Department to the fact that a total of 140,000 replacements would be due by the last of November. The cable closed by saying:

"To send over entire divisions, which must be broken up on their arrival in France so we may obtain the replacements that have not been sent as called for, is a wasteful method, and one that makes for inefficiency; but as replacements are not otherwise available, there is no other course open to us. New and only partially trained divisions can not take the place of older divisions that have had battle experience. The latter must be kept up numerically to the point of efficiency."

By March of the following year, Replacement Centers had been organized and by November, 1918, 236,000 replacements had been sent overseas.

We are now profiting by our 1918 experience.

During the present war, Great Britain has been using Training Centers which are comparable to our own Replacement Centers. They have proved to be the most efficient method yet devised for training civilian soldiers.

Scope and Purpose of Training

There is nothing new in the task of recruit training. All units in our army are busy doing just that at the present time.

The Replacement Center problem, however, is different from the usual recruit drill. Here, we are faced with the necessity of mass production making necessary a new approach and introducing many new difficulties.

This will be readily apparent when one realizes that the initial contingent of trainees will be approximately 1/7 of the total cavalry strength in December, 1940, and roughly ⅔ of the strength of all regular army cavalry that was in actual service in December, 1939.

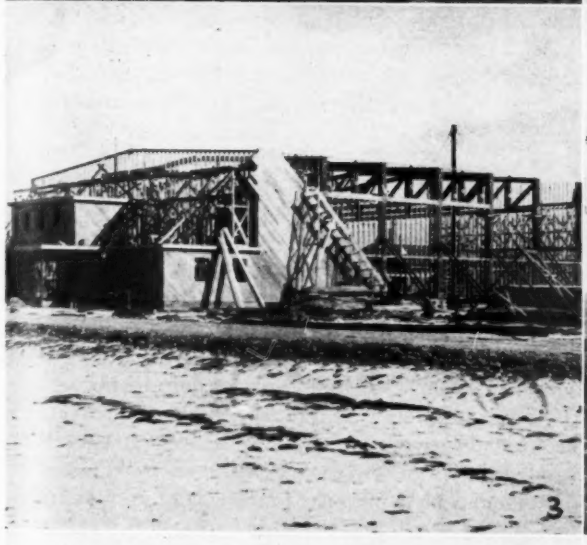
We expect to accomplish our difficult task by developing a corps of highly specialized instructors each of whom is an expert in his own line.

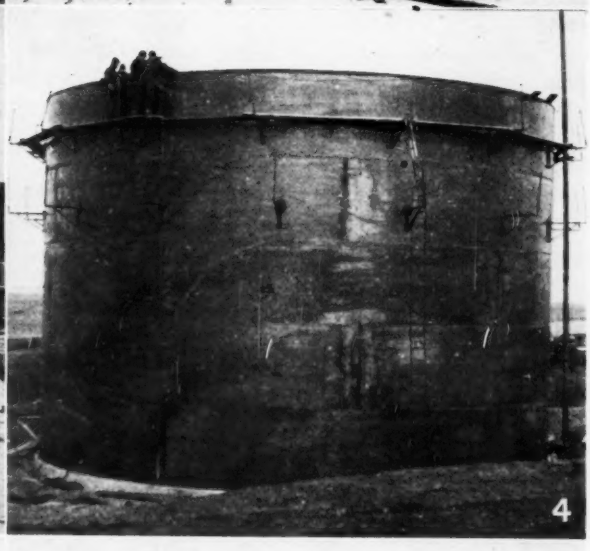
Training at the Cavalry Replacement Center is based on the Mobilization Training Program 2-2, War Department, November 12, 1940, revised. It will be conducted along functional lines: basic training is the responsibility of training squadrons; and training in Horsemanship, Motors, and Weapons will be conducted by the respective departments.

The purpose of the Replacement Center is to provide basically trained individual soldiers as replacements for horse and mechanized cavalry units, capable of operating efficiently in garrison or field with their regiments.

Basic training includes the training usually given to a recruit. The more technical training will be conducted by the three departments set up for that purpose. The entire organization is based on the premise that *the Cavalry Replacement Center is an organization for the training of cavalrymen and all other considerations, such as administration, are secondary.*

The usual methods of instruction: lectures, practical





1—Lieutenant Colonel Augur confers with construction chiefs. On his left is Sidney F. Ditmars, vice president of the Manhattan Construction Company, and on his right is Ray E. Basore, general superintendent of construction for the Long-Manhattan-Watson Construction Company. To the left are Major C. D. Keith, mess officer, and Lieutenant Colonel H. P. Stuart, S-4. 2—Barracks showing details of insulating materials and metal sheeting. 3—War Department Theater takes shape. 4—Replacement Center Reservoir, capacity, a half million gallons. Two wells, each capable of pumping 1,000 gallons per minute supply tank. 5—Major P. M. Martin, chief of weapons department, inspects range construction. 6—Lieutenant Colonel H. G. Holt, chief of motors department meets the scout cars as they arrive from Fort Meade.

exercises, and demonstrations supplemented by training films, will be used in all departments. Special buildings for class rooms will be available for lectures. The eight large recreation buildings may also be utilized.

Master Schedule

A master schedule has been prepared; based on a 44-hour training week of five eight-hour and one four-hour days.

Each eight-hour training day is divided into three 2½ hour instruction periods allotted equally to Basic, Weapons, Horsemanship and Motors. Horsemanship and Motors instruction will be conducted concurrently for men destined for horse and motor units respectively.

From Monday to Friday inclusive, all selectees will have physical training for thirty minutes each morning previous to the start of the first 2½ hour instruction period.

Saturday mornings will be devoted to inspections and open hours not assigned to specific subjects.

Instructors will keep a check sheet noting the proficiency of any outstanding trainees in order that such men may be recommended for specific duties upon assignment to combat organizations.

Organization

The Cavalry Replacement Center organization consists of a Headquarters and eight training squadrons. Each squadron has its own headquarters consisting of a squadron commander, a squadron adjutant, and three enlisted men. Each troop is commanded by a captain, assisted by two lieutenants. Troop officers will be charged with troop administration and will be called upon to give basic instruction. All training squadrons consist of four troops with the exception of the 7th and 8th, which have two troops each. The training troops will have a maximum of 220 trainees, divided into four platoons, each with a sergeant instructor and a corporal instructor. These instructors will accompany their platoons in all their training exercises.

Weapons Department

The Weapons Department is headed by Major Paul McK. Martin, late of the same department of the Cavalry School. Instruction will consist of training in the maintenance, operation, and use of Cavalry Weapons, to include the M-1 and M-1903 rifles, cal. .45 pistol, cal. .30 machine gun, air and water cooled, caliber .50 machine gun, 60- and 81-mm. mortars and 37-mm. antitank gun. Antiaircraft firing will also be taught.

In general, the scope of training in weapons follows the procedure indicated in Field Manuals. The objective is the preparation of the trainee to fire his weapons so as to completely exploit their powers on the battlefield. Qualification as prescribed in MTP 2-2 is an intermediate objective.

Rifle instruction is carried out so as to give a thorough course of preliminary instruction with both the M-1 and M-1903 rifles. The preliminary course will be repeated before any firing is attempted. Record firing will be conducted with the M-1 rifle.

Pistol firing is carried on concurrently with machine gun instruction. The training with these weapons includes mechanical instruction, preliminary marksmanship, 1,000-inch, and field firing.

Motors Department

Lieutenant Colonel Harold G. Holt is Chief of the Motors Department. This department has as its objective the qualification of all motor trainees in the operation and 1st echelon maintenance of military vehicles. Instruction will include operation of vehicles in military formations and as individuals under all conditions of roads, terrain and weather. The motors department will have available for training: 24 M-1 scout cars which were sent here from the 4th Cavalry, 28 M3-A1 scout cars, 45 2½-ton cargo trucks, 9 five-passenger sedans, 22 solo motorcycles, 22 tricycles or Bantams, 1 4-ton heavy wrecker, 1 2½-ton semi-trailer, 3 combat cars, and 1 ½-track mortar carrier.

Horsemanship Department

The objective of the Horsemanship Department and Major E. M. Burnett, its Chief, is to qualify each trainee as a fairly competent horseman. On completion of the course, he will be expected to ably manage his horse individually and in ranks, at all gaits over varied terrain; to execute well all mounted movements of the squad and platoon, including approach formations, combat formations, and the mounted attack. He will have been taught to care for his horse and equipment under various conditions of bivouac, marches, rail and motor movements, and to fire the pistol when mounted, with facility and accuracy. Emphasis is placed on quietness and smoothness of all mounted movements.

A total of one hundred sixty-two hours is to be devoted to training by the Department of Horsemanship. An effort will be made to develop a genuine love for horses in the trainee. Each man will spend an average of two and a half hours per week to the care of animals and equipment. This, multiplied by the three thousand odd men in the horse squadrons will be sufficient for the proper care of our 1,600 animals and their equipment.

Incidentally, the training period will be a test of the stamina and endurance of our horses, for each mount will be ridden by two to three men a day. This will result in from five to seven and a half hours work a day for each horse. The plan has earned the title at the Replacement Center, of the "three men on a horse" system.

The whole of the riding time, for the first two weeks, will be devoted to equitation. In the third week, half of the time will be utilized for mounted drill and the remainder for equitation. As the course progresses, instruction will be given in mounted scouting and patrolling, mounted combat, mounted pistol firing, marches,

and loading and unloading for rail movements and portée.

Training Facilities

One of the finest features of the whole camp is the convenience of ample training facilities immediately in and adjacent to the camp.

Dismounted drill and parade grounds have been graded and leveled so that each unit need only form outside its own barracks to start such training. Huge open areas, 600 feet in width, extend in the shape of a cross through the center of camp, approximately one mile in length and a half-mile in breadth. Additional training areas extend around the outside edge of the camp.

Raised wooden platforms are being constructed in each squadron training area as a training aid for massed calisthenics and other subjects where centralized control is desired.

Drill areas for the motors department and the horsemanship department are immediately south of the motor park and west of the stable area. The soil here is generally sandy and firm even during wet and rainy weather.

Target ranges extend along the north side of camp and gas chambers for chemical warfare defense training are being built on the eastern edge. Under this plan, units can move to any type training area without interference with other troops and can start training with little or no loss of time.

The range facilities at Fort Riley are being considerably enlarged to take care of the great increase in personnel. Details of this work were given in an article in the last issue of The Cavalry Journal. Briefly the National Rifle Range, from a mere fifty targets, has been increased in size to 225 targets. An adequate number of mounted pistol courses and a dismounted pistol range of 150 targets will be made available. There is under construction also, a 1,200 foot powered antitank range as well as thirty 1,000 inch landscape targets and two hundred 1,000 inch rolling machine gun targets. A 500 inch antiaircraft range is under construction and there are seven new field firing ranges in addition to the one already in use on Machine-Gun Ridge. In addition to all this, there will be eighteen 1,000 inch antitank targets.

The horsemanship department will have for training purposes thirty-two corrals and three large training rings. The 1,600 horses will be housed in thirty-two cavalry-type stables. Jumping chutes will be placed leading into corrals.

Recreation

Adequate recreational facilities are being provided. To start with, each training squadron has a recreation building with a 37 x 99 foot floor space. The building is equipped with a stage and a moving picture projection room. Ping-pong tables, games, magazines, and other things are being procured to help keep John Trainee happy. The rather limited supply of recreational funds available at first has not allowed for extensive athletic equipment. However, it is anticipated that this will soon be augmented from post exchange profits. Sufficient supplies are already on hand for certain sports. There will be thirty-two soft ball areas, each containing two diamonds. These will enable a maximum of 1,280 men to play soft ball at a time. Intramural games will be held between troop teams. Volley ball and horseshoe pitching courts have been provided also.

Three 16 millimeter moving picture projectors will be available. These will be used primarily as training aids, but it is thought that they may be utilized for entertainment also through the use of the film libraries of the War Department and Corps Area Headquarters.

And now spring is coming, and with it some 5,400 selectees. The entire replacement center personnel, representing almost all American cavalry organizations, are enthusiastically looking forward to their arrival.

Soon we will be engaged in turning out basically trained selectees who we hope will not only compare favorably with other replacement center products but will be so outstanding as to bring credit on the Cavalry service.

Suggestions or recommendations of all cavalry agencies are invited to the end that the Cavalry Replacement Center may reach that peak of perfection expected of it.

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No war plan extends beyond the first military engagement with the hostile main forces. Only the layman believes that the course of the campaign has followed a predetermined course, which has been planned in detail far in advance, and has been clung to tenaciously to the bitter end.

—MOLTKE (the elder).

Selective Service Men in Cavalry

By Lieutenant Leland W. Cramer, 14th Cavalry

EDITOR'S NOTE: *This type of training was in effect prior to the establishment of the Cavalry Replacement Center, now in operation.*

* * *

ON January 30th, 1941, at about 7:00 o'clock at night, a train bearing 289 selective service men for the 14th Cavalry pulled into a siding at Camp Funston, Kansas. They came from Kansas and her neighboring states, Missouri, Arkansas, Oklahoma, Nebraska and South Dakota. They had received some preliminary processing and some clothing at the reception center at Fort Leavenworth.

Darkness had already fallen when the trainees detrained and formed a column of twos on the siding. General Allen and his staff and Colonel Pierce and his Troop Commanders and the 14th Cavalry Band were there to meet them. The adjutant read off the names of the men that were to go to the various troops. As soon as a troop had the allotted number they were marched through ankle deep mud to their respective barracks.

Troop A received 31 men. Because the troop was under strength, these men and their NCO's—2 Sgts. and 5 Corporals—were assigned to a building by themselves. The bunks had already been set up and the men left their barrack bags on bunks and washed up and were marched to the Mess Hall where a hot meal was waiting for them, and so to bed.

This was on Thursday night. The following morning they assembled with the rest of the recruits of the regiment in one of the less open areas of the camp and were welcomed and given a few pointers on the army by General Allen, Colonel Pierce, a medical officer, a chaplain and a Red Cross representative. The rest of the time was spent in outfitting them, drawing equipment, etc.

Monday morning they started on their training schedule. This schedule calls for instructional formations from 7:30-12:00 and 1:00-4:30. Now first call goes at 6:15 and for these recruits to be ready for drill at 7:30 presenting a creditable appearance and having stood reveille, eaten, and cleaned their barracks they could not waste any time.

After 4:30 they must return from drill and clean up for retreat. Immediately after retreat is the evening meal and then they have the rest of the day to clean their arms, equipment, etc. Also during this time there is firing on the indoor range and studying guard orders and always special instruction for those who did not get the daily class work done as they should have.

During the evening, too, the NCO's are assembled to go over the next day's work and for special instruction.

A great many people have asked me if my selectees did not show resentment at being forced to give up their jobs, leave their families, and undergo military training, and if they were not hard to handle.

I have been happy to be able to answer that such was not the case, that indeed the direct opposite is true. I have never seen such an enthusiastic and coöperative group of men.

The contact of the army and their civilian trainees have given both sides some surprises. As illustration of some I have had: I built an indoor range on which I was conducting small bore practice. I was only letting each man fire five rounds. Several of the trainees wanted to fire more. I explained that I was trying to make the ammunition allowance go as far as possible and that I thought it would do them more good to fire a little every day than to shoot it up all at once, and that we didn't have time enough. They thought this over a while, then came and asked me if I would let them fire at night if they bought their own ammunition.

One man came to me one evening and wanted to keep out a machine gun assembly we had been using to demonstrate functioning of the machine gun. I asked him what he wanted it for and he told me the corporal had told him he must know it "cold" by the next class meeting and that he could not understand the field manual without seeing the parts working in front of him. I let him have the parts and asked if the NCO's were bearing down on him pretty hard. He said, "No, I am really surprised they are such a swell bunch of guys."

During the World War they said almost all recruits knew how to fire a rifle when they came in. In the group of selectees I have, hardly any of them had ever fired a rifle or pistol. Very few had ever hunted or had occasion to use firearms. But already their average scores are higher than the old men in the troop with the .22 rifle and pistol. (My theory of the reason is, that they have never been kicked by a Springfield, and they won't be, either, as we now have the new M-1's!)

I have been surprised at their mechanical ability. On

the first day we studied the light machine gun, one of the recruits inadvertently pulled the cover latch and spring off as he was removing the butt plate. I said, "Put that back on." He held the spring in one hand and the latch in the other and looked at them a minute, put them together and then back in place correctly. I asked him if he had experience with machine guns and he said no, this was the first time he had worked on one.

I have been asked a great number of times if I thought they were really a cross-section of American youth. I know of no way to answer this except that I have only been in the army three years and they are just like the young men I grew up with and went to school with at home.

One of the most frequent questions is, "Don't they require a lot of pampering?" "Don't they get homesick?" No, they are not being pampered and they do not require it. They are adults, not boys, and they have been on their own and have had responsibilities before. As for being homesick, the same is true again: a great many of them have been working away from home before. They like their barracks, they like the chow, and besides, they are too busy to be homesick.

Another question is, can they take it? Are they soft? The recruits have been here a month now and are entering their fifth week of training. This week's training calls for preliminary rifle practice. They clearly demonstrated that they could take it the first day on the range. The temperature throughout the day varied from 14 to 28 degrees above zero with a northwest wind of about 15 miles per hour. We had to leave Camp Funston at 6:30 AM and go to Republican Flats to fire. Everyone's eyes were watering and noses were running. No one had fired the .30 cal. before but at 200 yards in all positions except offhand, very few shots were out of the four ring. These men have earned my respect.

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"Battle is the final objective of armies and man is the fundamental instrument in battle. Nothing can wisely be prescribed in an army—its personnel, organization, discipline, and tactics, things which are connected like fingers of a hand —without exact knowledge of the fundamental instrument, man, and his state of mind, his morale, at the instant of combat. . . . Man is flesh and blood, he is body and soul. And strong as the soul often is it cannot dominate the body to the point where there will not be a revolt of the flesh and mental perturbation in the face of destruction. . . . The best masters are those who know man best, the man of today and the man of history."—ARDANT DU PICQ—(From *The Relation of Psychology to Leadership,* Helmick.)

A Day at a Semi-Permanent Camp

By Lieutenant P. B. Davidson, 2d Cavalry

THE clatter of the clerk's typewriter was suddenly stilled; the two junior lieutenants put down the books they were looking at, in the corner; the first sergeant hovered outside the troop commander's office; all attention is centered on one person, the Troop C.O. That individual, repeated the Adjutant's last words —"Move to Funston; be out of your barracks by Friday." M-Day (Moving-Day) had arrived for the troop. The event nobody thought would happen for months, was on us and we had to be out there in three days.

We knew a little about Funston; everybody in the regiment had made a couple of P.R's. It was common knowledge that a troop unit consisted of three barracks, one day-room, one mess and one administration building. One trip was sufficient to show that the whole area floated in a sea of brownish, river-bottom mud. We had a few plans and no joy in our hearts for we were the first troop to go; the others sat by, watching.

This article is written to give those outfits who follow us into Funston (or any other semi-permanent camp, they're all the same), a picture of conditions and installations as they actually are. We hope to pass on a few pointers, ones that we picked up the hard way. We'll pass on a few mistakes, too, and all of it with the hope that some other troop will save a little time, effort, and expense in the undertakings.

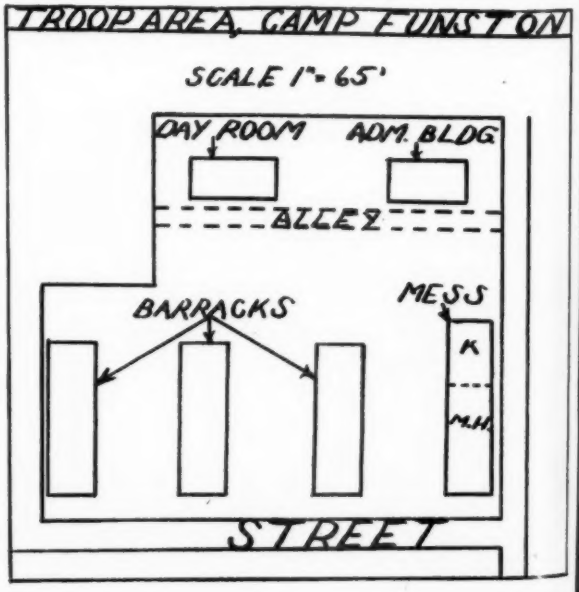
Since every troop has its own system of moving, small space will be devoted to that phase of the occupation. The determining element is time. If you have lots of it, you can prepare your set-up at Funston before you move; if you haven't got much time, you might use what we called the "Dump System." We made our move in three days.

The first day, we moved our dayroom out completely and began the movement of the supply room. Certain non-essential items of the mess and orderly rooms were moved. The move was made in four, one and a half ton Dodge trucks. The men were rationed and quartered in the old barracks on the Post. The second day, we continued the movement of the supply room and got all, but the necessary supplies of the mess and orderly rooms, evacuated. The men still remained on the Post. The third, and last day, was taken up with the final removal of the mess, the orderly room and the personal equipment of the men. The men were rationed beginning with the evening meal of the third day, at Funston. Due to the fact that the stables were not completed, our horses and stable equipment were left on the Post.

Now a word regarding this "Dump System." Due to lack of time, it was impossible to prepare our supply room at Funston to receive our equipment. Since the troop was greatly reduced in strength, due to outgoing cadres, we found that two barracks sufficed to quarter the men. That left one barrack available in which we could place our equipment while the installations (shelves, lockers, etc.) were being constructed. As the troop carpenter removed these installations from our former barracks, he would place them in the supply room at Funston, unhampered by a mass of equipment. Long after our three days of moving grace were gone, we were working on the new supply room and transferring our stores from the third barrack to their permanent place.

The Troop Unit

The troop unit consists of six buildings (not counting the stables), three barracks, a mess hall and kitchen, a dayroom, and an administration building housing the supply room and orderly room. All of the structures are of one story (except the barracks, which are of two stories) with pine floors and walls. The heating system is excellent; the barracks and dayroom are air-heated and the mess and administration buildings are heated by modern gas stoves. The component buildings of the troop unit are arranged as shown in the accompanying diagram. In order for the reader to get a clearer picture



of the set-up, each component must be considered separately.

The mess hall (and kitchen) was the most pleasant surprise of all and, I believe, most organizations will find it an improvement over their former mess. It is furnished with a huge, efficient Majestic range, two big ice boxes, hot-water heaters, sinks and mess tables. It has a long, narrow storeroom which is ample after a few shelves have been knocked out to provide room for the GI cans. The entire building is 29 feet by 101 feet. The kitchen itself is 36 feet by 20 feet.

In general, the arrangement of the mess will be an individual affair depending on the installations the troop owns and the ingenuity of the mess sergeant. There are a few general notes that might be passed on. (1) I've already mentioned that the storeroom will have to be altered. (2) After trying several ways, we found that the most economical use of table space in the mess hall could be accomplished by using three rows of tables with the long axis of the tables parallel to the long axis of the buildings. (3) The kitchen table placed there by the Quartermaster was of pine boards, unsightly and hard to keep clean. (4) The ice box drains freeze very easily. The mess sergeant overcame this annoyance by placing the boxes on two-by-fours so that the heat of the room could get under the boxes.

The barracks are two-storied structures consisting of two large squad rooms, four smaller rooms to be used for noncommissioned officers' rooms, and a combination shower room and latrine. I understand that specifications call for a capacity of sixty-three men but it would be a crowded barracks with that number. A rifle troop, however, will have no trouble accommodating its war strength organization. They are issued equipped with folding steel cots and no shelves or furniture whatsoever. The latrines and showers are topnotch; new wash bowls with stainless steel mirrors and a built-in shower room, whose only drawback is that there are only three showers.

The main problem in the barracks is to find some way for the individual trooper to take care of his uniforms and equipment. We brought our foot lockers with us, and to replace the wall lockers, we constructed shelves and racks as shown in the photograph. The shelves are 16 inches wide and 24 inches long; the racks are 16 inches long. The field equipment of the individual is placed on the shelf, his uniforms hung below on the rack, his barracks bag, hats, and towel are hung on nails. The belt rack shown in the middle is built by nailing a straightened clothes hanger between the two, two-by-fours.

Mess Hall, Troop E, 2d Cavalry.

Barracks of Troop E.

We utilized our N.C.O. rooms for several purposes. In the barracks next to the mess hall, we installed our cook's room in the large noncoms' room. In the middle barracks, we placed our troop N.C.O. club in the large room (and the troop barber shop in the smaller room; the barber shop was installed directly above the shower, in order to simplify the problem of getting hot water to the shop). In the third barracks, the large N.C.O. room is used as a classroom and is equipped with a sand table, barracks chairs, and a blackboard.

Dayroom

The dayroom, or recreation building, consists of one large room and two small ones. The large room is big enough to accommodate two pool tables, a radio, and a number of chairs without crowding. The two smaller rooms have been turned into a reading room and a writing room. The doors can be closed and much of the noise of the big room shut out. One of the small rooms may have to be turned into a charge-of-quarter's room eventually. As we brought all of our pictures and trophies of the former dayroom with us, this building has been turned into a cheerful, colorful room, and one which is doubly appreciated by the men as recreational facilities have not yet (February 15th) been developed at Funston.

Administration Building

The administration building consists of a supply room and an orderly room. The orderly room is divided

into two rooms. The small outer room is used as the first sergeant's and troop clerk's room; the inner room by the Troop Commander and his officers. The arrangement of rooms is poor, there being too much space for the officers and not enough for the first sergeant and clerk. It is, however, unavoidable if the Troop C.O. is to have any privacy.

The supply room is by far the greatest problem confronting the Troop Commander in moving into Funston. One must realize that it was built (as were the other buildings) for an infantry company and is simply not large enough for the equipment of a cavalry troop, not to speak of the plunder supply sergeants accumulate through the years. The troop supply sergeant threw away two truck loads of junk before we moved out and now wishes he had discarded five or six more.

The supply room, itself, is 33 feet by 25 feet with a large sliding door in one side to admit a truck. It is turned over by the Q.M. *sans* shelving of any kind. In order for a cavalry outfit to store all of its equipment, all shelves and racks will have to be carefully planned and, at the present writing, it is doubtful if all equipment can be stored under any arrangement. The windows have been barred by the Constructing Q.M.

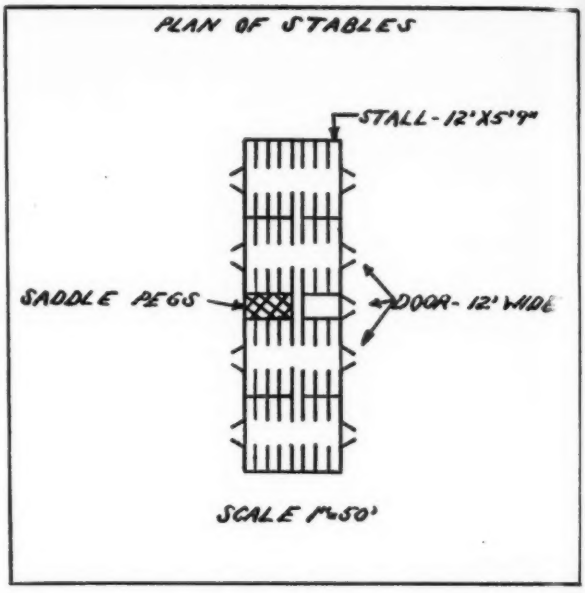
At present, there is one method of solution of this supply problem under consideration. It is to set aside one barracks per four troops for use as an auxiliary supply room. This barracks will have heavy wire screens and locked doors separating the various troop supply areas. In these areas will go the field equipment of each troop, laid out where it can be constantly checked and inspected by the Regimental Commander. This will work, but it will require materials, labor, and an extra barracks to be available.

The Stables

At present, two stables are issued per troop (when troops reach their war strength, one more will have to be added). The stables are 158 feet by 46 feet, wooden structures with crushed rock floors and a total of fifty-eight stalls per stable. There are no saddle rooms and no lofts.

The arrangement of stalls is unique, to say the least. With foresight, the Quartermaster has constructed these buildings to serve as either motor sheds, gun sheds, or stables. The stalls have sides which may be removed quickly as they are not nailed but are fitted into grooves in the posts. This makes it easy to fashion box stalls by removing the center sections of two standing stalls. There is a center aisle running parallel to the long axis of the building. There are five doors on each side of the stables, each opening into an aisle running perpendicular to the long axis. On each of these aisles are seven stalls. (See diagram.)

No stalls have been constructed on one side of the center aisle (parallel to the short axis) and in their



place seventy saddle pegs have been placed. The pegs are too close together and are so short that a man cannot place a packed saddle on them. The other side of the aisle is vacant, and in this space it is planned to construct a rack for the pack equipment. No arrangements have been made to store forage in the stables by the Constructing Q.M. at present. The best solution seems to be to remove the stalls out of one end of the stables and use this space for storage of forage.

The corrals, situated between the stables, are of crushed rock. They are 158 feet by 120 feet and will have a steel cable picket line running down the center. They are issued unfenced. There is one circular tank in the corral which will accommodate eight horses at a time.

The stable shack is of two rooms and includes a blacksmith shop, and a room serving as sleeping quarters for the stable gang. The shack contains hot and cold water, gas heat, and will sleep four men comfortably. No provision has been made for the saddler's shop.

Conclusion

In general, the semi-permanent camp is as comfortable and convenient as are the permanent barracks. With ingenuity, the troop areas can be made quite livable. The mess, barracks, and dayroom are probably on par with the average troop installations in garrison. The supply room, orderly room, and stables are not up to the average, but for a semi-permanent set-up, they suffice very well.

The troop areas are well designed, well constructed and compact. The heating system is excellent, being thermostat controlled and dependable in any kind of weather—*considering everything, we like it!*

Notes From the Cavalry Board

"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the President, Cavalry Board, Fort Riley, Kansas."

Test of Fire Power Factors of Small Arms.—The Cavalry Board is conducting a firing test to determine the accuracy of fire power factors of small arms assigned to various weapons in the *Umpire's Manual* published by the General Headquarters of the Army. An extract of this manual states, "The relative effect of the several weapons cannot be evaluated precisely, but is indicated sufficiently accurately by the following power factors:

Rifle—either M-1 or 1903	1
Automatic rifle	3
Light Machine Gun	6
*Heavy Machine Gun	10
60-mm. mortar	6
81-mm. mortar	15

*Including caliber .50 when used against personnel."

The manual also prescribes adjustments to be made in the several factors because of range. The assigned value is reduced as the range increases.

The test will include firing each of the weapons assigned to Cavalry, at field targets at various ranges.

Delay Action Tracer.—The Cavalry Board recently completed a test of delay action tracer for both caliber .30 and caliber .50 weapons. This tracer is designed to start burning brightly at a considerable distance from the muzzle of the gun, with the result that the trace is maintained for a range greater than the standard tracer ammunition. The test indicated that the trace of the caliber .30 became visible at about 600 to 800 yards from the gun and burned out at about 1,500 yards, while the trace of the caliber .50 became visible at about 800 to 900 yards from the gun and burned out at about 2,000 yards.

The Cavalry Board has been assigned a continuing project of preparing changes for various field manuals prepared under the direction of the Chief of Cavalry. Changes for FM 2-5 Horse Cavalry, FM 23-35 Automatic Pistol, Caliber .45, FM 23-40 Thompson Submachine Gun, FM 23-45 Browning Machine Gun, Caliber .30 HB, M1919A4, Ground, and FM 23-60 Browning Machine Gun, Caliber .50 HB, M-2, Ground. Changes for the above manuals and others prepared under the direction of the Chief of Cavalry will be prepared from time to time so as to keep the manuals up to date with changes in organization, equipment, and doctrine. Report of any errors or desirable changes noted by individuals or units of the Cavalry service will be welcomed by the Board.

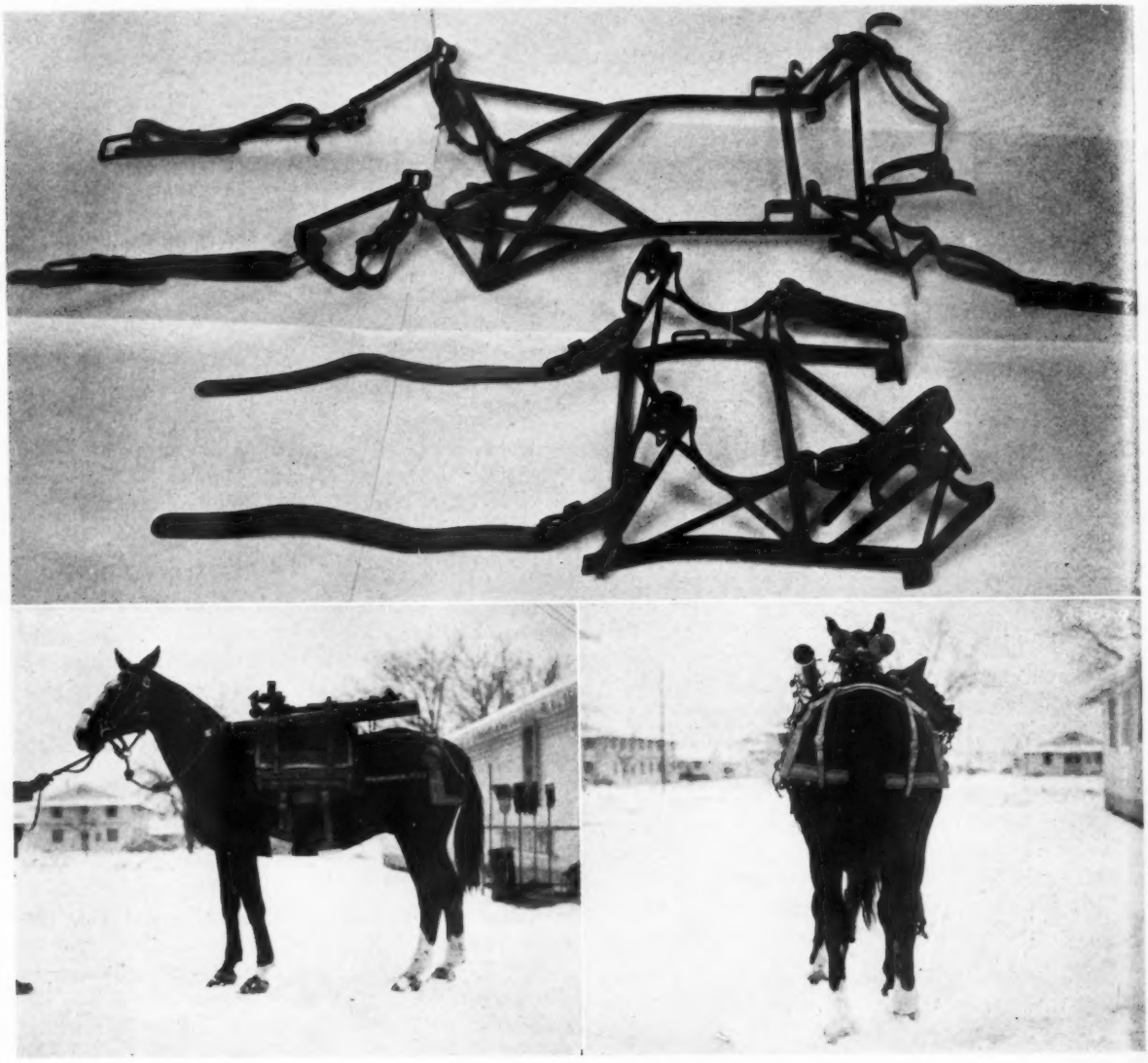
Motortricycle.—The new military motortricycle (3x2) has been received by the Cavalry Board for service test. This vehicle is designed to carry three passengers, including the driver. It apparently is very sturdy and stable cross-country.

Cargo Carrier.—A full track cargo carrier has been received, and tests are being conducted to determine the needs, if any, of such vehicle in the Cavalry service.

Over-the-shoe Rubber Boots.—These articles are lightweight knee-length rubber boots which may quickly be pulled over the shoes or leather boots. While not satisfactory for marching they might prove to be essential, for instance, for motorized personnel engaged in digging their trucks out of the mud, or for use in bivouac.

Tool-set, Horseshoers.—Before taking action on previous recommendations made by the Cavalry Board for improvement in types and quality of certain tools which should comprise the horseshoer's tool set, the Quartermaster General has forwarded for test a new tool set which was done in response to a request for a lighter weight tool set by the Cavalry Board in 1937. Regardless of the results of this latter test, the Cavalry Board will reiterate its recommendations for satisfactory tools to be included in the next standardized tool set for horseshoers.

Chains, Tire, Kwik-on-rod.—Each chain has eight cross chains spaced by pairs so that when they are on the wheel the traction obtained is similar to that obtained with the use of four separate pairs of so-called emergency chains. Because of this spacing, it is possible, by the use of a hooked rod fastener to put on the chains without jacking up the wheel. This seems to be a good emergency feature to be used when the saving of time is important. However, for the same reason that four pairs of emergency chains give less satisfactory traction than twelve cross chains equally spaced, this type chain is less efficient than the regular type skid chain.



81-mm. mortar hangers

81-mm. Mortar and Ammunition Pack Hangers.—Pilot models of 81-mm. mortar and ammunition hangers constructed by the Ordnance Department have been tested recently by the Cavalry Board. These hangers were constructed according to sample hangers designed and constructed by the Cavalry Board and local ordnance personnel. The mortar packs include the tube, bipod and base plate arranged as illustrated. Although undesirable, it was necessary to include a top load in order to secure a proper balance. It will be noted that the tube is placed at an angle to the horizontal. This was necessary in order to place the tube as close as possible to the saddle and still avoid contact with the horse's neck or hip. The base plate makes a convenient side load. The bipod was necessarily placed rather high behind to avoid contact with the horse. The length of the tube and bipod causes the load to rock somewhat at the gallop. However, this motion is not excessive. Top load brackets are made as a part of the side load hangers. While this is undesirable it is believed preferable to separate top load brackets bolted to the saddle, in the interest of flexibility. These brackets are braced to secure strength and rigidity.

The ammunition hangers were also constructed according to designs submitted by the Cavalry Board. The hangers are constructed so as to carry standard shipping containers, 6-round bundles of shell M-43, either HE, or practice, or 3-round bundles of shell, HE, M-45 or smoke shell. The normal load is two bundles of shells—one on either side. This provides a well balanced, stable load of about 190 pounds, including the saddle. The hangers are designed to carry an additional bundle as a top load. This is practicable for short distances and at slow gaits, for instance, in transporting

ammunition from the combat truck to the mortar position area. The additional bundle increased the total weight on the horse to about 240 pounds.

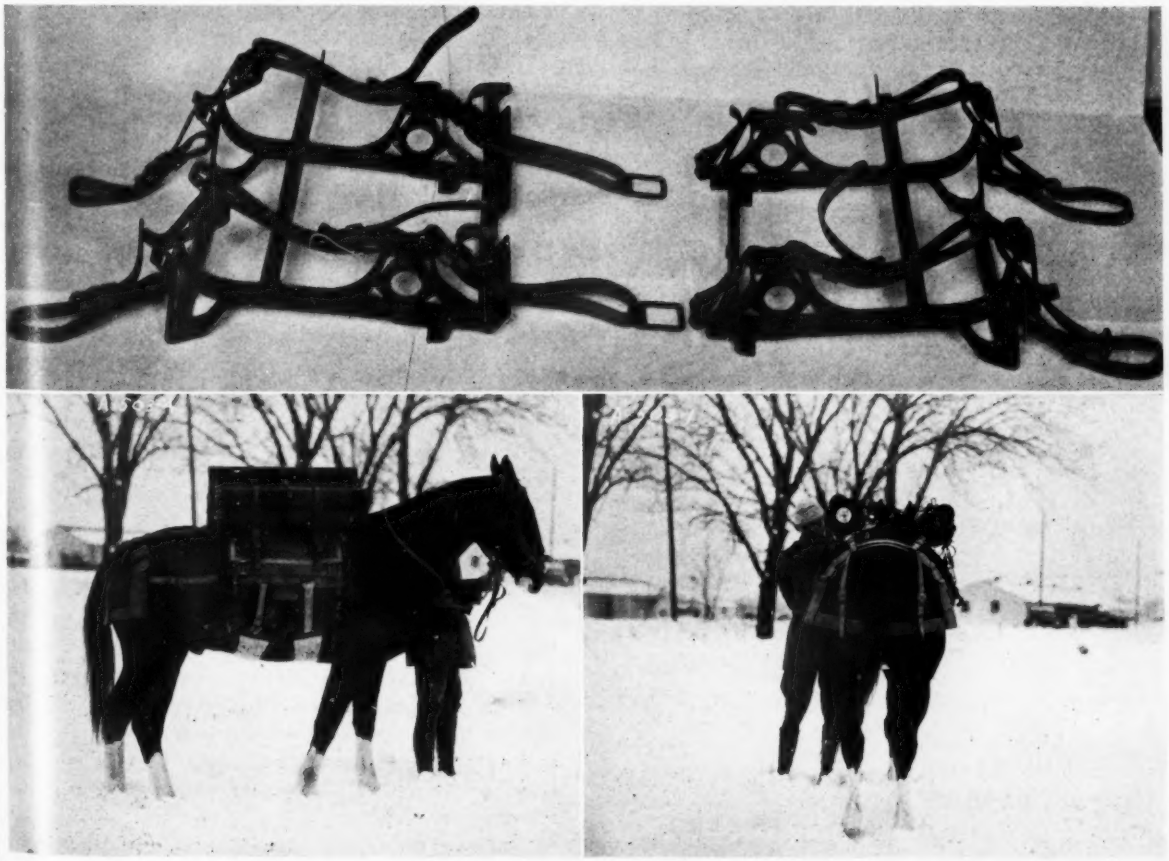
Truck, ¼-ton (4x4) Liaison.—Practical tests of these four cars are being continued. Many possible uses of this car for the Cavalry are being considered.

Tire Pump.—Service tests have been conducted of an air pump for use on pneumatic tires. This pump would eliminate the old type hand pump, and utilize the vehicle motor to pump air into the tires.

Receiver, Radio, BC-482.—The Receiver BC-482 is similar to the BC-312 to the extent that it has the same basic circuit and has about the same weight and dimensions. In fact, it is understood, it was manufactured by a commercial concern according to the basic specifications for the BC-312 receiver and specifically intended to be used as part of the SCR-245 radio set. The main difference between the two receivers lies in the elimination of bands of frequencies which are outside the frequency range of that needed for this type of set. That is, whereas the BC-312 receiver has a frequency range from 1,500 kc to 18,000 kc, the BC-482 is confined to the band 2,000 kc-6,000 kc. (The band allotted to Cavalry units lies between 2,000 kc and 3,000 kc.) This reduction has permitted simplification of the set which, in turn, makes all parts easily accessible for maintenance and, in addition, has made it possible to reduce the noise level with a consequent improvement in the readability of signals. The saving in weight thus afforded has been taken advantage of in making a more substantial cabinet which constitutes an essential improvement over that of the BC-312 receiver.

Other projects before the Board are:

Antitank Gun (37-mm., M-3).
Pull type single shot antifire trigger mechanism for BMG, Caliber .50, M-2, HB.
Gun elevator for MG, Caliber .30, tripod mount, M1917A1.
Study on Cavalry Weapons.
Low quarter shoes.
Modification of horse equipment.
Shelter tents and Pyramidal tents.
Weapon carrier.
Water cans.
Feed boxes.
Combat suits.
Airplanes for short range liaison.
Bullet seal inner tubes.
Frequency modulation vs. amplitude modulation.
Radio needs for Cavalry.
Textiles for uniforms.



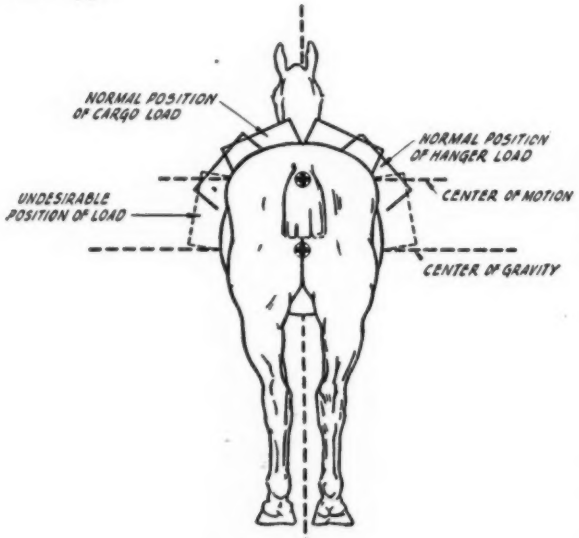
81-mm. ammunition hangers

CAVALRY PACKS

By Colonel Albert E. Phillips

"SO now you are a pack outfit, and a Cavalry pack outfit at that"—said the Colonel of a Cavalry regiment as he designated a troop to be the machine gun troop of his regiment. "What's the difference between a Cavalry pack outfit and other pack outfits?" replied the Captain, intending partly to lead the Colonel out into a faraway field, and perhaps trip him up, or, at least find out what the old boy knows about the matter.

The Captain quickly learned that he wasn't as smart as he thought he was when the Colonel informed him there are three types of pack transportation. One:—that of pack trains, of which hitched side loads predominate, the gaits of the pack mules being mainly the walk, running walk, and occasional slow trot. Two:—that of pack artillery, of which high top-loads predominate, with the walk the normal gait; the management of this type differing materially from that of pack trains. Three:—that of Cavalry pack transportation with compact side loads carried in hangers, and a few light top-loads, the gaits being those of Cavalry and the animals being horses. Pack transportation at Cavalry gaits constitutes an entirely different problem from the two other types.


NORMAL POSITION OF CARGO LOAD
NORMAL POSITION OF HANGER LOAD
UNDESIRABLE POSITION OF LOAD
CENTER OF MOTION
CENTER OF GRAVITY

LOADS IN RELATION TO CENTERS OF GRAVITY AND MOTION

Well, here we are then, a pack outfit with brand new pack saddles, but with our old horses and a good complement of old soldiers. Where shall we start and what shall we do to become worthy of the American Cavalry tradition; to be, in fact, a Cavalry troop worthy of the name and not a mere parade outfit? And by this I am referring back to the Mexican Punitive Expedition of 1916-1917 in which three out of the four machine gun troops were "out," due to disabled animals, within ten days. In other words, three Cavalry regiments had no machine guns after ten days of campaign marching. A terrible indictment, but true, nevertheless. One of these three regiments did have two guns left for a few more days. The fourth regiment marched six days before crossing the border, made the 120 mile forced march to Colonia-Dublan, and continued south to Parral and back to Dublan with all guns and all animals in top condition.

The "troubles" were caused partly by *Aparajos;* partly by the machine gun troops being required to take the rates and the gaits of the column—which are seldom the best gaits for either cavalry or pack horses—but mainly to a lack of detailed knowledge of the handling of pack saddlery.

Gaits

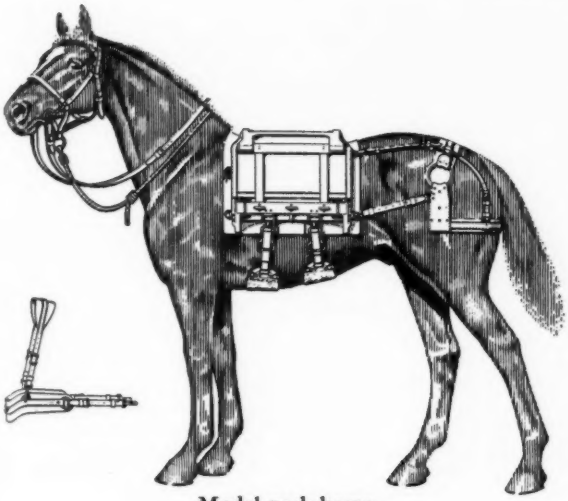
The best gaits for a cavalry pack outfit are the walk, and the trot, which does not force the pack animals into a gallop. For, be it remembered, a pack animal will take that gait which is easiest for him and, when the trot exceeds that of eight miles, many pack animals will break into a gallop. A pack troop can trot for a longer period at eight miles without injury than to alternate between the walk and a nine mile trot. Whenever a pack horse gallops while the troop is at the trot, the rate is too fast for that troop or there is something wrong with the packsaddle or the pack load of that horse. A saddle or load forward of its correct position tends to force the horse, or, at least, make it easier for him to gallop. Generally, the trot is too fast.

Pack Horses

While dissecting the packsaddle and learning its intricacies, your most important additional problem is the selection of the most suitable horses for carrying those packsaddles. Your success as a pack outfit depends upon being present with the cavalry when needed, and the bucking broncos and the rough-gaited horses will not get you there. You want a pack horse that travels neck-and-neck with the driver's horse; one that does not hang back and have to be pulled along—such as we see much too often in photographs.

You want the type of horse that the sergeants usually ride—the horse that has a good back for a packsaddle,

★Colonel Phillips, Cavalry (Retired), and now on active duty with the Quartermaster Corps, designed and developed our present splendid pack saddle.

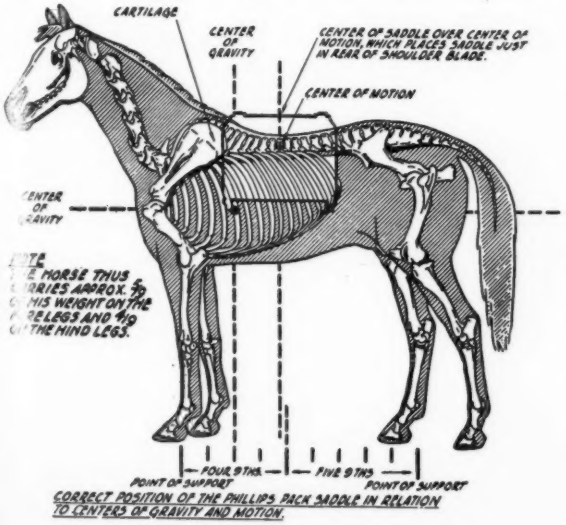


Model pack horse.

but with little motion to its back at both the walk and the trot, and which travels low to the ground at the trot. You do not want either a high-trotter or an elongated walker with a camel-like motion to its back. Let the men ride these other horses. They'll soon train them as suitable mounts. You require a pack horse that steps out at the walk and trot—a better horse than his teammate rides. Train your teams to travel in pairs, to break into the gallop on the instant, and to stop just as quickly. A rapid removal of the load when halting from the gallop will achieve prompt halting. Horses soon learn this. I have known of but two Cavalry machine gun units that gave preference, in the selection of horses, to those carrying packsaddles, and these two units were outstanding. The Commander of one of these units said to me: "I now never have to worry about my packs or my outfit."

The Packsaddle

The Cavalry packsaddle is simplicity itself, yet we seldom see a photograph of a packsaddle "breeching"


CARTILAGE
CENTER OF GRAVITY
CENTER OF SADDLE OVER CENTER OF MOTION, WHICH PLACES SADDLE JUST IN REAR OF SHOULDER BLADE.
CENTER OF MOTION
CENTER OF GRAVITY
NOTE
THE HORSE THUS CARRIES APPROX. 60 % OF HIS WEIGHT ON THE FORE LEGS AND 40 % ON THE HIND LEGS.
FOUR 9 INS.
FIVE 9 INS
POINT OF SUPPORT
POINT OF SUPPORT

CORRECT POSITION OF THE PHILLIPS PACK SADDLE IN RELATION TO CENTERS OF GRAVITY AND MOTION.

properly adjusted. The breeching should be adjusted with the saddle in its correct position, the center of the packsaddle over the center of the motion of the horse—the fifteenth vertebra, fourth rib from the rear. Pressure on the breeching should be exerted through the lower, or holding, strap—never on the upper, or hold-up strap.

Cinch pressure is mainly on the front cinch. Rear cinch pressure should merely be sufficient for the rear of the saddle to gain contact. A too-tight rear cinch will cause much trouble. Cinch pressure is all-important. Always have the minimum required, both for marches and for combat.

Break the saddles in gradually, adjusting the padding wherever excessive sweat marks appear upon the backs and sides of the horses, but, also pay attention to "dry spots," as these frequently indicate "no pressure." The point is—to remove hair from over the excessive sweat marks first, and then perhaps the "dry spots" will disappear as pressure becomes equalized. The mohair pad absorbs sweat and evaporates it, sometimes leaving dry spots.

Whenever an injury occurs, endeavor to determine the cause before disturbing the pad. But, whatever the cause, it will generally be necessary to remove pad pressure from over the injured spot to insure healing. There are two methods of doing this:

1. Place the saddle upon the animal's back, without the mohair pad, in the same position it was before unsaddling, and cinch tightly to mark the pads. Oxide of Zinc or Methylene Blue may be used to mark the pad. Unsaddle, detach the pad, or pads, affected and remove sufficient hair to relieve all pressure. Hair is removed from the top or outside of the pad through appropriate hand holes. Pull hair from the back of the pad with the hair hook, and then push in the belly side to form a concavity, and tie. The detached pad should be held over the injury as a check upon your work.

2. The second method is similar to the first, but requires a little more experience. It consists of placing a vertical chalk mark on the horse along the front line of the saddle then, having an assistant place the detached pad upon the horse's back, in coincidence with this mark, at the approximate height the pad would be when attached to the frame. By observing the pad from the opposite side one may determine the amount of hair to be removed or added. Hair should be added to the pad when the injury heals.

All horses lose flesh in campaign, thus requiring adjustment of pads. Assuming that your saddle were fitted in the early part of the campaign, adjustments will more often require the addition of hair. If curled hair is not available, grass, hay, straw, pieces of gunny sacks or paper may be used for building up the pads.

A word about breast collars. Experience has shown that breast collars are not required except for about five per cent of all pack horses. In the great majority of cases breast collars are improperly adjusted, and thus cause trouble. Most pack units adjust these breast col-

Load stability—correct adjustment.

lars for a neat or snug appearance for garrison duty. A snug or tight-fitting breast collar at the walk pulls a packsaddle forward at the gallop—and this most emphatically is not desirable—for, remember that all saddles move forward and blankets move rearward. If the breast collar is used it should be loose-fitting, or adjusted for the gallop. But, what we generally see is just the opposite of what is advocated here; *we see tight breast collars and loose-fitting, sloppy breechings. Sloppy breechings are at once tell-tale indication of a lack of knowledge of pack saddlery.*

Make use of your cinch quick-release devices, by having the straps clean and lightly oiled. And don't let anyone tell you that these devices do not hold; they were tested exhaustively before adoption. Whenever a cinch becomes loose it is generally due to the saddle settling or the drawing up of the horse's belly. If you care to test the devices, draw a mark along the edge of the bottom bar of a device and if this mark moves the strap has slipped.

Detailed instructions for the fitting and adjustment of packsaddles are found in T.M., the Packer, June 10, 1931. (For a treatise on Cavalry Pack Loads, see my article on page 226, the May-June, 1938, CAVALRY JOURNAL.) *Also, see Chapter 5, "Pack Transportation," FM 25-5 1939, "Animal Transport."*

★ ★ ★

Our Packsaddle

The design of the Phillips Packsaddle has made possible the development of some new and superior types of hitches.

For diagrams illustrating the Sweeten, Nagle, and Phillips cargo hitches, see *Basic Field Manual—Animal Transport* (FM 25-5 War Department). This document was prepared under the direction of the Chief of Cavalry.

For the convenience of members, the Cavalry Association will furnish the *Basic Field Manual—Animal Transport* direct from this office. Price, 25c. Address: 1624 H Street, N.W., Washington, D. C.

Notes From the Chief of Cavalry

Supply of Cavalry

On frequent occasions there are expressed ideas from various sources that the supply of Cavalry elements is more difficult and requires more transportation facilities than for comparable units of different arms. An investigation of this subject indicates that such opinions are not supported by actual facts. The following table shows the actual tonnage required for a day's supply of the principal types of present-day combat divisions:

Amored Division	513 Tons
Square Infantry Division	305 "
Cavalry Division	262 "
Motorized Triangular Infantry Division	221 "
Standard Triangular Infantry Division	201 "

It may be noted further, that when hay is omitted from the supply of the Cavalry Division, its tonnage is reduced to 206 tons and when both hay and oats are omitted, which may be the case in an emergency, the tonnage of the Cavalry Division is reduced to 166 tons, or the smallest requirement of the five types of divisions.

Comparison of Fire Power

The following figures indicate the organic weapons of each type division upon which a basis may be made of comparative fire power:

Weapon	*Square Div.*	*Triangular Div.*	*Cavalry Div.*	*Pack*	*Vehicle*
MG (HB) .50	144	113	265	32	233
HMG .30	120	122	356	48	308
LMG .30	72	57	327	144	183
Auto Rifle	506	375	15		
Rifle	9,541	6,942	4,592		
75-mm. How.			24		
105-mm. How.	48	36	12		
155-mm. How.	24	12			
37-mm. AT	84	60	67		
81-mm. Mortar	48	36	28		
60-mm. Mortar	108	81			
75-mm. AT	16	8			
Sub MG .45			35	490	
Pistol	10,532	7,199	10,344		

Training Literature

When the present-day army emerges from the current status in which supply is emphasized and enters a new stage of intensive training, there will arise acute interest in the utilization of all training aids. One of the foremost aids to training is found in our military training literature. For the Cavalry, the following list will indicate to those who are interested various types of training aids charged to the Cavalry for preparation, and the status of each particular item:

Field and Technical Manuals

			Date Last Published
Cavalry Field Manual	2-5	Horse Cavalry	August 6, 1940. Change No. 1. Now in hands of printer.
Cavalry Field Manual	2-10	Mechanized Elements	Now in hands of printer. Probable date of publication, April 30, 1941.
Cavalry Field Manual	2-15	Employment of Cavalry	Now in hands of printer. Probable date of publication, April 15, 1941.
Basic Field Manual	23-35	Automatic Pistol, Caliber .45, M1911 and M1911A1	April 30, 1940.
Basic Field Manual	23-40	Thompson Submachine Gun, Caliber .45, M1928A1	August 19, 1940.
Basic Field Manual	23-45	Browning Machine Gun, Cal. .30, HB, M1919A4, Ground	August 14, 1940.
Basic Field Manual	23-60	Browning Machine Gun, Cal. .50, HB, M2, Ground	September 25, 1940.
Basic Field Manual	25-5	Animal Transport	June 15, 1939. Change 1, Sept 30, 1940.
Technical Manual	2-220	The Horseshoer	Now in hands of printer. Probable date of publication, April 1, 1941.

Cavalry is responsible for the production of the following strip films and training films: Their status is as shown:

Strip Films

No.	*Title*	*Status*
2–1	Care of Animals.	Released June 15, 1940
	Military Org.; Org. of Cavalry.	Cavalry Board preparing.
	Horsemanship.	Cavalry Board preparing.
	Cavalry Weapons.	Cavalry Board preparing.
	Combat Principles of the Rifle Squad & Platoon and Lt. Machine Gun Squad and Platoon.	Cavalry Board preparing.
	Cavalry Marches and Camps.	Cavalry Board preparing.
	Combat Principles of the Cal. .50 Machine Gun Platoon, 81-mm. Mortar Platoon and 37-mm. Antitank Gun Platoon.	Cavalry Board preparing.
	Combat Principles of All Troops of Cavalry Regiment (H).	Cavalry Board preparing.
	Antiaircraft Defense.	

Training Films

Proj. No.	*Title*	*Status*
55	Lt. MG Platoon, Cav. Tr. (H).	Being written.
56	Reconnaissance (Scout Car) Platoon.	Being written.
156	Horsemanship, Instruction Mounted (Basic TF)	Being written.
	Animal Management (Basic TF).	Approved for production. Preparation not yet started.
	Pack Transportation (Basic TF).	Approved for production. Preparation not yet started.
	Communication Plat., Hq., Tr., Cav. Regt. Horse.	Approved for production. Preparation not yet started.
	Heavy MG Tr., Cav. Regt. (H).	Approved for production. Preparation not yet started.
	The Cal. .50 MG Plat., Spec. Weapons Troop Cav. Regt.	Approved for production. Preparation not yet started.
	81-mm. Mortar Plat., Spec. Weapons Troop Cav. Regt.	Approved for production. Preparation not yet started.
	Cav. Rifle Tr., (less platoons).	Approved for production. Preparation not yet started.
	Scouting and Patrolling, Mtd.	Approved for production. Preparation not yet started.
	Portée Plat., Serv. Tr., Cav. Regt. H & M.	Approved for production. Preparation not yet started.
	The Motorcycle Troop.	Approved for production. Preparation not yet started.
	37-mm. Antitank Plat., Weapons Troop, Cav. Brig.	Approved for production. Preparation not yet started.
	Reconnaissance Tr., Rcn. Squadron, Cavalry Division.	Approved for production. Preparation not yet started.
	Cav. Rifle Plat. (revision of TF's 65, 73, 74, silent, and TF 18, sound).	Approved for production. Preparation not yet started.

Cavalry Camouflage in Winter

By Captain E. C. Sanders, 10th Cavalry

SINCE before the days of recorded history camouflage has been practiced. In nature we have protective coloring of birds and animals that blends so well with their native surroundings that they are hard, if not almost impossible, to perceive at a distance.

In the Finnish-Russian Campaign the hardy Finn added to his laurels as a soldier by his remarkable use of camouflage that would enable him to blend with his snow-covered surroundings in the below zero cold of the Arctic winter.

10TH CAVALRY

Top—Patrol emerging from woods. Center—Reconnaissance detachment. Bottom—Message received at regimental command scout car

We commonly associate the term "camouflage" with efforts to conceal big guns and their emplacements, hangars and air fields and machine gun nests.

To Cavalry, the use of camouflage is important.

To instantly take advantage of terrain and natural concealment is part of a Cavalryman's training. The art of camouflage is practiced to some extent by every seasoned trooper.

Somehow, whenever one thinks of Cavalry in campaign, he does not associate ice and snow and cold weather with possible conditions of field service. Yet Cavalry has operated in blizzards and under climatic conditions that would seem to foredoom any effort that could be made.

With this in mind, the 10th Cavalry took advantage of a heavy snowfall in January at Fort Leavenworth to perform some practical experiments in Cavalry Camouflage. Troops were taken out and observed in close and extended order formations at varying distances.

Under favorable circumstances it is harder to conceal a mounted trooper than it is a man dismounted. In the snow, unless protected by trees or other cover, a mounted trooper stands out distinctly as far as the eye can see. If that same trooper and his mount were covered with a white material what would be the effect at varying distances? In picture No. 1 an officer's patrol from Troop A, 10th Cavalry, is shown at a distance of fifty feet. Animals and men were draped with ordinary bed sheets. While they show up very plainly, and the contrast is pronounced at the short distance in the photograph, when this same patrol operated in lightly wooded areas the camouflage was surprisingly effective even as close as 100 yards. Uncamouflaged parts of horses did not stand out and it became more difficult with increasing distance to see the patrol at all. At 200 yards, the mounted patrol could not be seen while motionless, and at 500 yards could hardly be seen while in motion.

Similar experiments were carried out with a draped scout car. Photograph No. 2 shows the scout car delivering a Radio message to Major R. G. Lowe, Commander of the Officers' patrol. Major Lowe, almost invisible, may be seen standing at the right front fender of the scout car.

Taken in the same high, dense spot, photograph No. 3 shows a reënactment of picture No. 2, Major Reed is shown handing a message to the noncommissioned officer. Behind Major Reed stands Major L. L. Doan.

The contrast shows very clearly the effectiveness of improvised camouflage, as well as the ease with which this protective covering may be made.

Winter Campaigns

By Colonel C. A. Romeyn, Retired

NOTES *from the Cavalry Board* in The CAVALRY JOURNAL, November-December, 1940, brought up questions concerning Cavalry campaigning in real winter; and those questions stirred up the brain cells of this "old fogy" and evoked memories of a real winter "campaign" of thirty-four years ago in South Dakota. Some of the lessons we learned then may be of value if our cavalry is again ordered into the field in zero weather. This campaign, I believe, was the last real winter operation undertaken by our cavalry in severe cold weather; it took the troops about one hundred miles from our railhead. Supporting troops were equally far, or farther, away. No supply dumps existed nearer than the railhead, so that supplies forgotten at the start were obtained a week or perhaps a month later, perhaps not at all. Practically nothing except hay could be purchased in the field.

1907

In the fall of 1907, the entire Second Cavalry was at Fort Des Moines, Iowa, having been concentrated that summer from Riley, Snelling and Assiniboine. A large part of the Ute Indian tribe had become dissatisfied with conditions on their reservation in New Mexico and had trekked northeast to Montana and South Dakota. They had been rounded up by the 10th Cavalry and, I believe, the 4th Cavalry and placed on a part of the Cheyenne River Agency (Sioux), in South Dakota. They did not like that location either, and becoming ugly the Agent asked for troops.

The Second Cavalry received a warning order to prepare a squadron for field service in South Dakota; and a short while later the order came to send a squadron at once to the Cheyenne River Agency to quiet the Utes. This was about the first of November. The Second squadron was commanded by Major F. W. Sibley, who probably knew as much about Indian campaigns as any officer then on the active list, and for that reason I imagine his squadron was selected.

We were to move by rail to Gettysburg, South Dakota, about a thirty hour trip, then by marching to Thunder Butte Creek where the Utes were located, about one hundred and twenty miles from Gettysburg.

At that time we had no tables of equipment for various types of field service, and few of the officers and enlisted men had ever been in the field in severe winter weather. We cudgelled our brains to think of everything we would need. The supply of real winter clothing was limited, but we managed to get equipped with muskrat caps, and the wool lined one-finger winter gauntlets. The officers managed to get the muskrat gloves; though I believe the enlisted men were better off with their one-finger gauntlets. We did not have enough blanket-lined canvas overcoats for the entire command but took enough along for guard duty. The enlisted men took all the blankets and comforters they possessed. Thirty days field rations, thirty days oats, two hundred rounds of rifle ammunition and fifty rounds of pistol ammunition per man were taken. Our horses luckily were not clipped and were smooth shod.

We marched into Des Moines from the post and loaded on the train in the yards. Wagons were run up on ramps and lashed and chocked in place. Horse equipments were sacked and tagged and loaded into box cars. We finished loading at about midnight of the day after we had received the warning order.

South Dakota

About thirty hours later, when we awoke we found ourselves at Gettysburg. The ground was nearly bare of snow and the thermometer was below zero. Major Sibley had given orders that we were to travel light as we did not know what we might run into or how far we might have to go if the Utes decided to hit the trail again. Officers were to be allowed one tent per troop. They could take a cot or a mattress but not both (the wise ones took the mattress). Yours truly, prided himself on being a rough field soldier and took neither, having a heavy canvas bed roll, a heavy Navajo blanket 6′ x 8′ and three other blankets. I was not cold either. No stoves. Officers would mess with their troops. Enlisted men were to use shelter tents, but could take squad-rolls of extra bedding. Each troop had two "Army" wagons. For the benefit of the younger generations I might explain that the "Army" wagon was a six mule "jerk-line" wagon that would carry about eight thousand pounds.

We spent all morning unloading our stuff, sorting it out, and loading wagons. Major Sibley said to load to the limit with oats and rations. The surplus equipment and stores were left at Gettysburg with a detachment to guard them. That afternoon we marched twenty miles and camped on the left bank of the Missouri, opposite the Agency. And for the first time in their lives many of the youngsters heard coyotes yelping, and wondered how dangerous they might be.

The Missouri was of course unfordable and the nearest highway bridge was several hundred miles away (if any existed). The only means of crossing was on a small scow ferry that held about twenty horses. It took

"HOOF PRINTS"

1—Custer's Trail of May 20, 1876, as it appeared in fall of 1939. 2 and 3—Names of Frank Neeley and W. C. Williams on rock at Custer's 12th camp site on Davis Creek about 6½ miles east of the Little Missouri River, May 20, 1876. 4—Charles Windolph, first sergeant, Troop H, 7th Cavalry, 1873 to 1883. Awarded Medal of Honor. He was eighty-nine years old on December 5, 1940

practically an entire day to get the squadron and equipment over to the Agency side.

All telephone lines to the neighborhood of Thunder Butte Creek were out of commission so nothing was known of conditions. In consequence we did not linger long at the Agency but marched out the next morning on our hundred mile trip. We covered about twenty-five miles (as I said before marching hours in the far north in winter are few) and it was a cold, cheerless, camp we made that first night out from the Agency.

Bivouac

We were on the bank of a small creek. No ranch was nearby so we had no hay. Horses were grazed, some held by men on lariats, a few picketed out. Some of the latter caused considerable commotion by pulling up the pins and then running amuck through the herd. A runaway horse throwing around a lariat with picket pin attached is no joke. Grass was plentiful, however, so in a couple of hours the herd was pretty well fed. Holes had to be cut through about six inches of ice to get water for horses and men. Wood was plentiful, dead cottonwood, and the camp was filled with fires for warmth. During the night a courier came in with a message that Captain Tilford whom we had left sick at the Agency was desperately sick, apparently appendicitis. Doctor Johnson was sent back at once, but with orders to rejoin as soon as possible as he was our only surgeon. He rode back that night; operated on Tilford (on a kitchen table, by kerosene light) and rode back to rejoin us at our next camp. He rode about a hundred miles in thirty-six hours with practically no sleep. (Tilford is still living though he had to be retired as a result of his operation and subsequent primitive care.)

In the morning, orderlies built camp fires in front of the officers' tents, around which we stood or squatted while we ate breakfast. We found a hot cup of coffee to be a grand handwarmer; and dropping knife, fork, and spoon handles into the coffee made eating more pleasant. No shaving or even face washing was indulged in, in the morning. Shaving in fact ceased until our return to the Agency. I left my fountain pen out of my pocket for the night and of course it froze solid, shoving the feed and pen point about an eighth of an inch out of the barrel. All morning reports had to be made out in pencil as the ink in the field desks was frozen. Water holes were chopped out again in the morning but it was labor wasted for the horses would not drink. We watered later at a creek crossing where it was still open.

We reached Thunder Butte Creek the fourth day out from the Agency, found things quiet, and started in to make ourselves as comfortable as possible.

Temporary Camp

The enlisted men started burrowing, making small dugouts roofed over by their shelter tents. Some went so far as to make small fireplaces in these dugouts. The mess gangs dug into the bank of the creek and made half dugouts, roofed by paulins or flies.

A prospect of hay shortage started us herding the horses. This was a new experience for men and horses.

We worked them slowly into it by knee haltering, i.e. tying the halter-shank around a fore-cannon with a round turn and two half-hitches so that the horse's head could not be brought up far enough to permit a trot. Even at a walk the heads bobbed up and down giving the herd the appearance of a lot of cripples. These hobbles were removed a few at a time from the quieter horses until soon we had the entire herds coming in at a walk. The usual procedure was to have half of the horses ridden out to the grazing area; the other half, led. The horses were knee haltered and turned loose, with a guard of five men. Coming back to camp, four men would ride in front equipped with long switches to slap the noses of over-ambitious leaders of the herd.

Conferences with the Utes and Agency officials soon ironed out the troubles; but we saw that we had to remain for a while; and the wagons were sent back to railhead to bring up heavy baggage, more forage and more rations. With the arrival of these our camp grew quite luxurious. "E" Troop officers had a conical wall tent and sending over to a nearby trading store Captain Wade bought a half-glass door and some two by fours. Then he made a real door for his tent to obviate untying and tying the flaps everytime anyone entered or went out. Wade also established the first bath by draping a bed-roll canvas over four tent-pins in his tent. With the stove going and hot water from the kitchen we were able to have some comfortable baths. Previous to that, I had taken a bath in the creek with air temperature slightly above freezing, water same, and with snow on the banks. Daily baths are not a necessity in zero weather but there finally comes a time. . . . That creek bath was thorough but quick.

Rations did not offer much variety, and game was scarce. I decided to experiment, and killing some prairie dogs with a .22 caliber rifle I had brought along, I tried them. They were just like squirrel. Young ones were good fried but the old ones went better in a stew. Potatoes started to run low—they had to come from Gettysburg—so we stopped paring them with a resulting considerable economy. *I* think they tasted better baked, boiled, and even fried, with the skins left on. The "K.Ps" certainly approved of them.

We had two great troubles with the tent stoves; too much heat went up the chimney, and in doing so took many sparks up that dropped on the canvas. The troubles were lessened by dampers improvised from tin can tops and some wire. We made spark arresters from perforated cans. The tent burning was really serious. The khaki dyed canvas seemed much more inflammable than the undyed canvas, and few tents returned to Fort Des Moines without spark holes. Colonel West (our regimental commander who joined us later) was at one time railing at the carelessness of anyone who let a hole burn in his tent. Reaney, his quartermaster suddenly said: "Look at your tent, Colonel." By the time Reaney and the colonel got the fire out the hole was about eighteen inches in diameter!

About ten days after our arrival we were astounded to hear that the rest of the regiment was on the way to rescue us! For several days after our departure from Gettysburg no word had been heard from us. Then a rumor spread that we were surrounded by hostile Indians. The rescuing force was much astonished when they found us living so luxuriously. In many ways we were better off than the new arrivals for we had had first choice on all Q.M. supplies and also had had time to fix up our camp. We had a good officers' mess going and gave the incoming officers a lunch of coffee and hot cakes—a better meal than they had had for several days.

Everything was quiet now, and after a few days more we marched back to the Agency, leaving one troop at Thunder Butte Creek for the rest of the winter.

Permanent Camp

At the Agency we set up a permanent camp near the river and awaited orders. Lignite coal was available and improvised grates of old horseshoes, stones, etc., enabled us to use the same. The wood question became serious as we used up all the small stuff and had now to take large logs—sections of cottonwood trees—one to three feet in diameter and four to ten feet long. Chopping these up and splitting them was too much for our axes. We bought two-man cross-cut saws and our blacksmiths made splitting wedges. With our limited bath facilities some of the men became lousy. A general bath day was ordered. A tent in each troop was rigged up as a bath house, hot water in huge quantities was provided by special details and the lice were routed, *pronto!* We soon began to get uneasy about getting back to Fort Des Moines. Ice was floating down the Missouri and a freeze-up was due at any time. Then, the ferry would have to stop running, and it might be many weeks before the ice would be strong enough to permit our crossing with wagons and animals. Although we had not yet received orders to move, Colonel West finally decided to cross to the left bank on his own responsibility. It was lucky that he did so for the day after we were all across, the ferry was hauled out for the winter. Orders soon came to return to our station and we reached Des Moines about one month after our departure.

Other Difficulties

A few more difficulties of a winter campaign come to mind. On the Tongue River, Montana, 1902-trip, I carried a Luger pistol issued for test. In the extreme cold the oil congealed to such density that the slide would not operate. How about our automatics and the Garand?

In the open it was almost impossible to get a welding heat in our field forges and we had to dispense with toe calks. Luckily we had very little snow. The issue horseshoe "balls up" terribly in even light snow. A 45° bevel on the inner edge will obviate this, so why not have shoes purchased already beveled? The "Neverslip

Snowshoe," a commercial horseshoe, properly beveled and already shaped, has been used in the north for many years. I always used them on my own horse at Keogh and at Fort Ethan Allen, Vermont, in winter. They are easily fitted, do not "ball up" and *hold*, even on glare ice. I have jumped logs with them from ice to ice. They should be issued for winter use.

When temperatures are ten degrees or more below zero, sentinels should be relieved hourly. Toes freeze very quickly at those low temperatures.

Starting on a winter campaign the cook shack should have at least four well sharpened axes and spare helves. These axes should be guarded and cared for like jewels. The squadron should have a grindstone. After the Ute expedition my trumpeters carried sharp, hooded axes in their gun boots in lieu of rifles, and in addition to the mess axes. I found them useful more than once.

Water cannot be carried in the canteens with the thermometer below zero. On several of those winter trips the men who tried it found the canteens froze solid and in most cases the canteen (old style) burst. How the aluminum canteens will stand freezing I don't know but I think some of them also will burst. Troops stationed in Alaska in recent years should be able to tell us something about this. Newfoundland troops also should be able to give us some data.

On my Tongue River Agency trip I did not consult the thermometer, my nose knew. On the Ute expedition we had a thermometer hanging on the mess tent flap after we put up the mess tent and I recall one reading of minus 32°.

Curb bits should be left at home and bridles taken into the tents nightly. After a couple of days you won't have any pullers. The old fashioned watering bridle is all you need; and with a snaffle bit only horses can do considerable grazing at halts and water much quicker on the march.

On neither of these trips (1902 and 1907) were we bothered by snow. However, I have had considerable marching in snow (horse-exercise) at Fort Ethan Allen. Horses can handle themselves very well in soft snow up to three feet in depth. Heavily crusted snow that will almost hold them up will make it very difficult for them, if over six inches deep.

I don't know if the modern trooper uses "eatin' tobacco" or not but at Thunder Butte our men ran out of it and fussed about it. We had no commissary or post exchange, and money was awfully scarce. I bought a caddy of "Star Plug" from the troop fund at Mrs. A. Bear's store and doled it out personally, not more than half a square per diem per man. I cut it up on an axe with a hammer. No tailor made cigarettes were available and smoking tobacco had to be bought and issued little by little, by me.

I broke the stem of my pipe and made a new one from a piece of ash bough, burning out the pith with a hot wire. Half of a "fork" made a bent stem. I smoked "Wild Rose of Virginia" plug smoking tobacco which I whittled up. And believe me it was wild; at least Mrs. Romeyn said it was too wild for indoors when I started to smoke it in the house on my return to Des Moines.

As in 1902, the health of the command on the 1907 trip was excellent. Outside of Tilford's appendicitis I do not recall a single serious illness or injury.

* * *

Of the officers of the Second Cavalry who made that trip I believe Colonel W. W. Gordon★ is the only one left on the active list. He stayed there the rest of the winter and should remember something about winter service. Some are dead but there are quite a few left on the retired list. If asked, they could probably give considerable information about winter service.

The officers of the Second Squadron Second Cavalry on this trip were: Major F. W. Sibley, Captains J. P. Wade, C. A. Romeyn, Samuel T. Purviance, Dean Tilford. Lieutenants John W. Moore, Walter F. Martin, Charles G. Harvey, Joseph F. Taulbee, Charles McH. Eby. Doctor —— Johnson, Contract Surgeon, and Doctor Burt English, Veterinarian.

★Colonel Gordon now commands the Third Cavalry at Fort Myer, Virginia.

★ ★ ★

"The troops of every army have their weak moments, for these are part of human nature itself. The general must allow for them as for a given factor, the dimensions of which it is impossible to ascertain."—HINDENBURG.

General Hawkins' Notes

Colonel T. R. Phillips' Article

ANOTHER of the excellent articles by Lieutenant Colonel Thomas R. Phillips has appeared recently in The Infantry Journal. It has received much notice, especially in civilian circles, on account of its severe criticism of the army.

I say that this article is excellent because of the characteristically clear expression of views and the exposition of the principles of war as recently developed in Europe. The article is well worth study from a technical point of view. I find myself in strong agreement with most of Colonel Phillips' ideas, but not all.

Discussion is what our military journals are for; so no one can take exception to some disagreement and argument. Colonel Phillips has made a number of criticisms of the army, some of which I think are unjustified. To understand which of these criticisms I refer to in these Notes, as well as to profit by other interesting things in Colonel Phillips' article, I recommend that the reader study his article before reading my Notes.

I think that the fault in the army was not in failing to have enough trucks to transport motorized infantry, nor in failing to mechanize a sufficiently large force. The army could not get Congress to give it enough trucks or enough tanks. As after every war in which we have been engaged, Congress, after the World War I, grew economical and parsimonious in its attitude toward national defense. It was told that European nations, especially Germany, were developing mechanized and motorized forces and air force. It was willing to increase our air force and to supply a few tanks, but in order to establish these new branches of the army it wanted to do so at the expense of the older branches. It would not increase the size of the army but wanted to pay Peter by robbing Paul. Germany did not do that.

This country was apathetic, talked of disarmament, listened to the growing number of pacifists and those who have since developed as fifth columnists. Attempts were made to frighten young men into believing that war was so horrible that peace at any price was better, and induced societies of young people to announce that they would refuse to join the army or navy in peace or war, unless the country was invaded. It never seemed to occur to these people that preparation was necessary and that after the country was invaded or even threatened, it would be too late.

I also disagree with Colonel Phillips that the army was at fault in relying too much on the old French 75's for our field artillery. I know that attempts were made to substitute new howitzers, the models of which were constructed by our Ordnance Department. But Congress, thinking of our large stores of the older guns, would not give the money.

I also disagree that the army failed to see the coming mechanization and aviation. These things were seen, but the army did not want to *replace* the old branches of the service by these new branches. Instead of replacing the older branches, the army wanted to add the new branches. That is what Germany did.

I don't think traditionalism had anything to do with it. I never saw an army officer who did not want to advance and progress toward new things if they were presented to him in a practical and convincing manner. In fact, there has been an inclination to jump to conclusions without thorough investigation.

Although the army was hampered in its training by skeletonized units, by lack of needed equipment, by the fateful scheme of detaching too many officers from troops, by the lack of enough troops to give sufficient training to the officers, by an unresponsive Congress and an apathetic people, I do not excuse it for certain failures in thinking, in teaching, and in practice.

To my mind the trouble has been in the failure of the War Department to insist and keep insisting upon the necessity of procuring large unrestricted areas for maneuvers and the necessary funds for assembling large forces in these areas and holding them there for long periods of training instead of the usual eight or ten days.

Those maneuvers should have been used for experimentation in new ideas, in judging the training of the troops and the capacity of officers under consideration for promotion, especially to the grade of general officer in the line. Watching or commanding troops in the field is the greatest inspiration to imagination and constructive thought that I know of.

The War Department, with the idea of decentralization, left training matters too much to Corps Area commanders who were so busy in administrative matters that they had little time for study and thought in tactical matters, and frequently no capacity for it. The service schools, particularly the Command and General Staff School and the War College, were not supervised enough by the War Department. The War Department itself was so engrossed in administrative affairs that it had no time for such careful supervision.

The Command and General Staff School, in which the instructors were merely former graduates, delighted

in teaching the use of formal and ponderous field orders in accordance with the French method derived from the long trench warfare in World War I. Initiative was discussed, but proper methods were not used to encourage and induce it. Open or movement warfare was talked about, but it was not understood that only by the initiative of lower commanders could it be carried out.

As mechanism grew in Europe, there was no consideration of the means of defense against tanks except in the use of an inadequate number of antitank guns furnished sparingly to each infantry and cavalry regiment. The enormous power of great mechanized forces moving against inadequate opposition was not appreciated. We were not alone in that. The armies of Poland, Belgium, France and England failed in the same way. The only idea in any of those countries was to oppose hostile mechanization by mechanization of their own; but unless you have a larger mechanized force than the enemy, this is a wrong use of your mechanized forces. Numerous and effective antitank guns, not only in the regiments but also organized into independent battalions in the division and corps, were necessary to stop the great German drives.

The German army was so strong that it would have succeeded without its mechanization against the weak opposition it met, but not so quickly. Mechanization in an army on the defensive should be used for counterattack, not thrown to certain destruction by headlong charges against the hostile superior force of mechanized troops. The Italians have made the same mistake in North Africa. This idea, however, is only one of the many that have been overlooked. Our infantry has failed to appreciate the importance of marching, either to study it as an art or to condition the men and officers. The marching power of the German infantry in this war has been reported as one of the most impressive things in their army. The same may be said of the use of cover. We talk about it, but do not practice it. The use of air force to coöperate with ground troops was talked about many years ago; but the air corps did not encourage it, and the War Department gave it no consideration.

Of course, these things are matters of opinion. Many officers in our army had these opinions, but there was no way to insure their consideration in the War Department. I agree with Colonel Phillips that there should be some organization in the War Department to receive and consider such ideas, and it should be supervised and directed by the Chief of Staff through the recently formed body known as G. H. Q. The G-3 section of the General Staff is not sufficient. It is not even accessible to the thoughts and ideas of officers out in the army. The only way an officer can air his ideas is by publication in the various service journals which are private affairs and not even read by the majority of higher officers.

There are plenty of able men in the army. The difficulty is to get them to the top. Ability to command troops in maneuvers, not only the solution of problems in schools, and contributions in thought and constructive suggestion ought to carry much weight in the selection of officers for promotion to the higher grades.

Of course, the evolution in tactics brought about in this war, and described so well by Colonel Phillips, has been apparent to everybody. In a very well written, very readable article which is both instructive and thought provoking, Colonel Phillips has clarified some of the new principles which must now be observed.

The article is weakened by rather unfair statements such as that one asserting that the shortage of tanks is exclusively our own fault. As I have already pointed out, Congress would not give the money. Certainly, we could not have supplied the army with the number needed now for our new army—and those we might have had a few years ago would have been obsolete now. They did however serve the purpose for which they were intended; i.e., for experimentation and the creation of a cadre which has made possible the development of the present armored force.

The statement that "The problem was further complicated by fear on the part of horse lovers that more tanks meant fewer horses" is unworthy of a writer of so much ability. I am a horse lover myself and, although recognizing the power of mechanized forces, do not hesitate to assert that cavalry is still very useful in every theater of war not devoid of water. This may be considered as traditionalism and ultraconservatism. It is not conservative at all. My ideas about our new cavalry I consider as advanced. Mechanization and aviation have their limitations, as Colonel Phillips admits. I believe that we should not throw away the new cavalry simply because we have added armored troops and aviation. We need everything.

I have read almost everything that Colonel Phillips has written, to my profit, but I cannot understand criticism of the army for not having enough trucks, tanks and new howitzers. In time of peace we never have enough of anything. I do agree that the Tables of Organization of 1939 for the hypothetical infantry division were stupid.

There is no use in complaining about the whole scheme of defense in the United States. This country is not going to have a big army in time of peace except in an emergency such as the present one. That has been the policy in all of its past history. Without a big army it will be caught wanting supplies and weapons in every emergency, and the regular army is going to be blamed for not having them—just as it has always been.

The age-old struggle between guns and armor goes on. Someday, perhaps soon, someone will invent a tank-killer, very mobile, that will lay out tanks like tin cans on a dump—and then mechanized forces will take a back seat, and those who did not foresee it will be called traditionalists, or old fogies, or something.

Mounted Attack Clarified*

IT seems that our cavalry is now being told by various persons of both high and low degree that the Mounted Attack is finished—it is senseless, ridiculous, suicidal—large units can never make a mounted attack —small units can do it only very exceptionally, which means not at all.

If all this be true, there is no sense whatever in teaching the technique of the mounted attack or in requiring the troops to practice it in training so as to be skillful in its performance.

Even if such training is required in order to provide for those very exceptional cases, we could not expect any enthusiasm, interest, or faith in it on the part of the troops after it has been discredited so completely. If the opportunity or considered necessity for it ever came, no one would know how or when to do it. And the probability is that if it were ordered, the officers might attempt to lead it but the troops would refuse to follow or do it so half-heartedly that it would fizzle out and result in a complete failure.

Under such conditions the cavalry will become a slow-witted, over-cautious, poor riding, unenthusiastic, spiritless outfit which is so timid in its riding that its mobility is gone, and so fearful of being caught under fire while mounted that its enterprise is gone also. In order to move rapidly across country, a cavalry unit must be trained in bold and skillful riding. But also, its mounted security patrols and covering detachments must be trained and willing to make mounted attacks against suddenly encountered enemy patrols and advanced elements which may be screening an enemy ambush or surprise attack. If these small elements dismount at the first hostile shot, they will be lost or accomplish nothing of the missions with which they are entrusted.

It is not true, as some assert, that the cavalry has been trained to make reckless mounted attacks frontally against superior forces of entrenched infantry and machine guns in position and all ready to receive the attack. Unless the enemy is inferior in numbers, or morale, and unless he is surprised or taken in rear or flank, mounted attacks are dangerous, and the cavalry has been warned of this repeatedly by the Cavalry School and by all competent leaders in the cavalry service.

The cavalry has been taught that certain requisites for success are necessary to warrant a decision for mounted attack. The most important of these for large units, by which is meant the squadron up to the brigade, is adequate fire support put into action first of all. The mounted riflemen must be properly deployed, not in one line, but in several successive lines or waves of horsemen deployed with intervals of about five yards. Some form of superiority either in numbers or in morale must be present. Surprise in some of its many forms is always sought. The character of the ground must be considered. If surprise is impossible and the ground affords *good cover* for advancing dismounted troops, a dismounted attack may be indicated provided the time element permits it and provided that superiority in numbers at the point of attack permits it.

Some foolish and ill advised mounted attacks have been made in maneuvers. They have been criticized severely. Often too severely. It must be remembered that in maneuvers and in actual war the commander of a cavalry force has not the information of the enemy that is usually given him in map problems and in stupid command post exercises where he is receiving a constant flow of messages and reports. In the real thing, a commander gets little or nothing of this sort, and what he does get is contradictory and confusing. He should not be held up to scorn if he guesses wrong, makes a mistake and launches a mounted attack that is unsuccessful. Severe criticism is more applicable when the mounted attack is launched unskillfully, without adequate supporting fire, crowding men into bottle necks of the terrain, or improper deployment, because these mistakes can always be avoided even though the information about the enemy is obscure. Nor should the critic condemn a mounted attack without stating what the alternative was. That is destructive criticism. Obviously, the officer so criticized wonders what the alternative was. Was it a dismounted attack? Were the conditions present that are necessary for a dismounted attack? Often, they are not, and it happens very often that a dismounted attack would be far worse than a mounted one because when repulsed the dismounted troops are unable to get away. Mounted attacks were made in the World War that succeeded with less loss than would obviously have been sustained by a dismounted attack.

No! You cannot rule out dogmatically the mounted attack for the hundreds of situations that present themselves in war.

The conditions in the present war are not so different from those in the World War that they should change the doctrine as far as cavalry is concerned. The chief developments that have been made are in aviation and mechanization. It has been written many times that mechanization owes its principal success to the support it has received from aviation. Would it not be possible also that cavalry mounted attacks in forces as large as a brigade could be supported by aviation in such a manner that they would be more feasible than ever before? The close support of ground troops by aviation was not an original idea with the Germans. But they were original in carrying it out. We used to talk about it twenty years ago in the Cavalry School. It was recommended in writing, but our air corps was not much interested in the idea at that time.

Many persons tried to rule out the mounted attack long before the World War. The result in our cavalry

*General Hawkins' Notes, continued.

was to destroy its usefulness by half. The World War came on and the cavalry of other armies, though antiquated in armament and training, gave literally hundreds of examples of successful mounted attack against dismounted enemy troops. One has only to read carefully the book *Cavalry Combat* to find himself astonished at the number of these cases.

It is obviously true that most of the future cavalry actions will be of the dismounted order, except, perhaps for patrols and very small forces. But that does not rule out the possibility nor even the probability that larger forces will sometimes be engaged mounted. Combined dismounted and mounted action may become very frequent. Especially on this continent will cavalry be useful, and the tactics of combined action will bring quicker and more satisfying results than any other form of attack. No doubt, such very important cavalry missions as delaying actions will be accomplished mostly by fire power. As antitank guns are developed more and more, a cavalry force equipped with squadrons of such guns will be the most effective force for delaying action against mechanization. Especially will this be true if cavalry is used in the "Trinity of Aviation, Mechanization and Cavalry" as described in the brilliant article by General Richardson in the January-February, 1941, number of The CAVALRY JOURNAL. Since the present trend seems to be to combine mechanization with motorized infantry and artillery in divisions like the German Panzer divisions, it would not be safe to predict that, when this "Trinity" is operating in delaying action against such divisions, the cavalry would have no opportunity for mounted action. Mounted action against tanks would be absurd, but against motorized troops caught in flank by surprise it might be very effective.

The spirit of mounted action and the training that it requires are absolutely essential in a cavalry force even though it may be employed habitually dismounted.

For either mounted or dismounted attack, the front of each deployed squadron must be covered by fire of supporting machine guns and sometimes by other supporting weapons. Therefore, there must be a group of these supporting weapons posted on one or the other flank of each squadron for this purpose. If we try to cover the front of more than one squadron by a single group of machine guns, the front will be so long that the ranges for the machine guns will be too long for effective fire on the whole front of the enemy line which confronts these squadrons. Each squadron must have its own fire support. Intervals of several hundred yards must be contrived between squadrons for this purpose unless there are no more than two squadrons abreast in the movement echelon, when the supporting fire units might be placed on both outer flanks.

When a cavalry division has developed its forces into various columns while approaching an enemy, its artillery and machine guns should be placed in their relative positions all ready to open fire if the enemy is suddenly encountered. The several columns of rifle units will probably be squadron columns prepared to deploy instantly into formations for the kind of action contemplated. If attack is contemplated, it is not known yet whether it will be all dismounted or whether some columns may find it feasible to attack mounted. As the covering forces gain contact with the enemy it will probably become known whether the hostile forces are mechanized, motorized or marching infantry. We must not expect to find the enemy in a fixed position making it convenient for us to maneuver our forces at leisure so as to attack by some deliberate or preconceived plan. In open warfare it is probable that he will be moving. It may be a strong mechanized force or a combination of some few mechanized troops with marching infantry or motorized infantry.

Whatever it is, the division commander must now decide how he is going to attack. If the enemy force is a strong mechanized column our cavalry division must maneuver to avoid a head-on clash. Falling back and swinging around to the flank to bring antitank guns into action on ground that is not favorable to tank movement, then working around to the rear to attack the hostile motorized infantry supporting its mechanization, giving way to retire to ground more unfavorable to the hostile mechanization, or whatever the movement may be, it must of course be mounted even if under fire. If the enemy, whatever be his composition, is supported by hostile aviation not neutralized by our own aviation, our division must resort to dispersion while maneuvering to attack the enemy. This requires great initiative on the part of the various column commanders, great flexibility and mobility over rough ground. The enemy will be active also. There may be combats between some of his flank or covering detachments and some of our columns.

One or more of our column commanders may have an opportunity to attack mounted, or such an attack may be imperative to avoid being stopped and pinned to the ground by one of the enemy detachments. Some columns may be forced to dismount in order to advance toward the point on the terrain that they wish to reach in the general maneuver of the whole division. Cooperation between columns may take the form of a combined mounted and dismounted attack. This is most probable. How could there be any coöperation in rapid maneuvering if the leaders are told that they cannot make a mounted attack but must dismount if opposed even by a very small force of the enemy trying to interfere with the general maneuver of the division?

These things obtain whether it is only a delaying action that is contemplated or a decisive attack required by the mission of the division. It may be a pursuit and the enemy may have a shattered morale. Such a loss of morale is very frequent during and after a severe battle. A well conducted mounted attack or combined attack under such circumstances is almost certain to bring wonderful results.

We must get over the idea of always acting with stereotyped movements. The division must be able to move suddenly and rapidly to the right, left, forward or backward, under the general direction of the division commander and by means of the initiative and audacity of the column commanders when there is not time enough for even brigade commanders to issue orders to all columns in his command. Both division and brigade commanders must have a sufficient number of aides or officer riders to carry messages to the leaders of the several columns and to remain with these columns long enough to make sure that the message is understood and is being complied with. Such brief messages as, "Division moves instantly by the right flank to attack enemy left rear" should be frequent. The commanders of the several columns must know what to do to obey such orders and how to do it.

During a maneuver in the face of the enemy, every column commander must know his relative position in the division and be willing to fight, either mounted or dismounted, to maintain it without waiting for messages to go to the brigade or division commander and for the answering orders to return.

No negative training—you cannot do this or you cannot do that—will produce the flexibility, the initiative and the audacity necessary for the success of a cavalry command.

Finally, it cannot be repeated too often or emphasized too much that the great necessity for mounted attack, and therefore the training for it, lies in the fact that a cavalry force moving swiftly to perform its mission is often interfered with or impeded by smaller forces of the enemy sent out to hold it up or delay it in its arrival at its prescribed destination. The intention may be to fight dismounted, or by fire action without forward movement, after arrival at the proper destination. But, in order to get there in time, the cavalry must not permit itself to be halted or made to make wide detours which would cause effective delay. If it is forced to dismount it loses valuable time and the enemy's object is attained. But if it attacks boldly, skillfully and instantly, against such inferior forces, by mounted action, it probably will surprise the enemy, disconcert him, and make it impossible for him to fight delaying actions in successive positions. Detouring or dismounting will often cause fatal delay. Prompt mounted action will save time when time is of the essence.

Thus, cavalry may fight its main battles dismounted but it is the intervening or preliminary fighting that will often require mounted action.

★ ★ ★

"SUN TZU said: The art of war is of vital importance to the State.

It is a matter of life and death, a road either to safety or to ruin. Hence it is a subject of inquiry which can on no account be neglected.

The art of war, is governed by five constant factors, to be taken into account into one's deliberations, when seeking to determine the conditions obtaining in the field.

These are: (1) The Moral Law; (2) Heaven; (3) Earth; (4) The Commander; (5) Method and Discipline.

***The Moral Law* causes the people to be in complete accord with their ruler, so that they will follow him regardless of their lives, undismayed by any danger.**

***Heaven* signifies night and day, cold and heat, times and seasons.**

***Earth* comprises distances, great and small; danger and security; open ground and narrow passes; the chances of life and death.**

***The Commander* stands for the virtues of wisdom, sincerity, benevolence, courage and strictness.**

By *Method and Discipline* are to be understood the marshalling of the army in its proper subdivisions, the gradations of rank among the officers, the maintenance of roads by which supplies may reach the army, and the control of military expenditure.

These five heads should be familiar to every general; he who knows them will be victorious; he who knows them not will fail."

—The Writings of Sun Tzu on the Art of War (505-496 B.C.).

LEADER OR ADVISER?

*By Major General William J. Snow, U.S.A., Retired**

WHEN we have done a good piece of work, it is always a satisfaction to have it recognized as such by some outside and wholly disconnected agency, and particularly when that agency exists for the sole purpose of giving an independent and impartial appraisal. Such an agency is the Inspector General's Department of the Army. The following extract, therefore, from the Annual Report of the Inspector General of the Army covering the Field Artillery in 1918 is interesting:

> "In that period covering the appointment of a Chief of Field Artillery, and also following the graduation on a larger scale of officers from the School of Fire, instruction of officers became more uniform and the efficiency of instruction, in general, more marked. Officers' Schools, in most cases, were very satisfactorily conducted, and a more or less definite policy in training followed, generally. In that period since the organization of new divisions in August, 1918, methods of instruction were by far the most efficient. In the case of this instruction, field officers were selected for their efficiency, a very definite policy as to what was to be accomplished, and how, was followed. Where sufficient matériel and men were available, organizations advanced rapidly in training. At the time of the signing of the Armistice, field artillery instruction was intensive and non-essentials eliminated.
>
> "The facts most important in making for efficiency in training were:
>
> 1. Appointment of a Chief of Field Artillery.
> 2. Organization of The Central Officers' Training School.
> 3. Operation of the School of Fire.
> 4. Establishment of Firing Centers where matériel and equipment were concentrated, and where expert instructors in the various specialties were sent.
> 5. The establishment of Replacement Depots where replacements for overseas were instructed, and which also furnished a nucleus of good, partially trained men for newly organized regiments, also contributed to the general efficiency of instruction."

All of the above five "facts most important in making for efficiency in training" are really summed up in the first one—"the appointment of a Chief of Field Artillery"—for all the others were originated by him, except the School of fire and, by chance, it also was his creation a short time prior to his appointment as Chief of Field Artillery. Even the School of Fire failed to make progress until after the appointment of a Chief of Field Artillery, in that the first enlarged class as planned by me, when Commandant, did not enter the School until I became Chief and could push this vital matter.

In the interval between my leaving Fort Sill in October, 1917, and my appointment as Chief of Field Artillery in February, 1918, my successor as Commandant of the School wrote me a personal letter saying that the War Department had apparently forgotten the enlarged School project and that it was on the verge of collapse. It is not at all improbable, therefore, that but for the creation of the office of Chief of Field Artillery the School would have died, for, when appointed Chief, I found that there were but few students and only a small and wholly inadequate amount of equipment at the School and but very little interest in the matter in the War Department.

In my stressing the importance of having a Chief of Field Artillery, there is, of course, the implication that such Chief has the necessary power to act. Manifestly the mere existence of a Chief without accompanying power would accomplish nothing. Prior to my appointment as Chief, the War Department General Staff had run the field artillery. They had made a miserable failure of the job and had not only wasted ten months of valuable time (and in war, time is of the essence) but, even worse, the General Staff had allowed an absolutely chaotic condition to arise in the arm ("Chaotic" is a strong word and it is used here because it is accurately descriptive). Had I, after my appointment as Chief, been a mere agency or mouthpiece of the General Staff to carry out their decisions, no improvement whatever would have resulted from my appointment; I would have been merely another cog in the machine. Fortunately General March recognized this fact and not once did he tell me during the war (or after) that I was exceeding my authority. He was a man who wanted results and wanted them quickly. And he knew that only by delegating power to his assistants could he get results; and the same situation must exist in the next war.

I am laying stress on this matter for, in the eight or nine years following the war, and while I was still Chief of Field Artillery, there was a gradual encroachment by the War Department General Staff upon the powers of the Chief of Field Artillery—a strong tendency to reduce him to a mere agency of the General Staff. If such a tendency were to continue in existence, it would mean delay, confusion, and even chaos again in the next war until it was rediscovered that the Chief MUST again be clothed with real power.

It stands to reason that a Chief rather than an impersonal staff is the official most interested in, and concerned with, the organization, equipment, training, morale, and efficiency of his arm.

I am not by any means hostile to a General Staff. I thoroughly recognize and understand its importance and value, but because of my service as Chief for a period covering nearly ten years, and involving both war and peace, I had the opportunity to form definite and positive views as to the relationship that should

From The Field Artillery Journal, January, 1941.

exist between a Chief of Arm and the General Staff in order that the team as a whole might function with the highest possible degree of efficiency. I am presuming therefore to indicate and emphasize this relationship in the paragraphs that follow.

The office of the Chief of Field Artillery was created during the World War to bring order out of chaos; it proved so effective and valuable that, in the reorganization of the Army following the War, similar Chiefs were created for the other Combat Arms, and all Chiefs made statutory.

In the hearings before Congress preceding the enactment of this law, General Pershing stated that the object was to make the Chief a LEADER of his arm; he used the very word "Leader." A Chief is *not* a leader of his arm if the General Staff makes decisions concerning that arm without consulting the Chief, and then directs him to carry out such decisions; or if the General Staff asks his advice on a purely technical question of that arm and then does not accept his advice. In such cases, the Chief, instead of a Leader, is a figurehead. Yet this happened during my service as Chief subsequent to the War. The result is, of course, that if decisions of the General Staff are harmful enough to his arm, the Chief of Arm concerned has to appeal to the Chief of Staff for a reversal of the General Staff decision, which incidentally was likely made by a subordinate far junior to the Chief, that is, the appointed expert, on the matter. Much time is thus wasted, feeling is engendered, and, if the Chief of Arm appears often enough before the Chief of Staff in the capacity of complainant, the Chief of Staff naturally gets into the mental attitude of regarding the Chief of Arm merely as an objector, and more or less of a nuisance, and a "Nuisance" is 180 degrees from being a Leader. Basically, this relationship between the Chiefs of Arms and the General Staff is entirely in the hands of the Chief of Staff. The relationship established by General March could well be taken as a model. It was he who realized and understood the value of a Chief of Arm as a technical adviser, and he decentralized to me as Chief of Field Artillery the responsibility and the authority that I should properly carry as the Leader of my arm.

A Chief of Staff who follows the line of least resistance will likely regard the Chiefs of Arms as advisers to the five War Department "G's" and not to him. There is a vast difference between adviser to the Chief of Staff and to the General Staff; in the latter case it is adviser to an adviser; and also the General Staff may (and it has happened in my experience more than once following the War) substitute its own views for those of the Chief without the Chief of Staff knowing anything about this substitution. If the reader will refer* to the memorandum fixing the status of the Chief of Field Artillery when he was originally appointed, he will see that it includes the following paragraph:

> "All questions pertaining to field artillery, arising in the War Department, will be referred to the Chief of Field Artillery, and his decision, given in accordance with the policy of the Chief of Staff, and subject to review by the Chief of Staff, will be final."

In looking back now after twenty years, I think that in drawing up that memorandum fixing the status of the newly appointed Chief of Field Artillery, I did a far better job than I realized at the time; and not the least important part of it was the paragraph quoted above. The proof is the fact that it stood the supreme test of war. In a short time no one on the War Department General Staff even considered writing anything about the field artillery without previously consulting the Chief of that arm. The result was a smoothly working organization of highest efficiency, and a confidence on the part of the Chief of Staff that when he received a paper from any War Department source, the part relating to field artillery was authoritative and represented my action as Chief.

There is one other phase of this question that I desire to touch upon briefly, and then I have finished. I refer to the failure, so likely to prevail in time of peace, of making a distinction between Chiefs of the Combat Arms, and those of the Services. Both the Chief of Staff and the General Staff are inclined to regard all Chiefs as exactly the same. This is wrong. It overlooks the fact that the combat arms are really the Army—they do the fighting. The services exist solely for the purpose of assisting the combat arms to reach the battlefield properly supplied and equipped. It is the combat arms that win or lose battles, and in this statement I am not ignoring the importance of command and staff work, or the importance of the supply departments. I am merely calling attention to the fact that these supply agencies exist solely to help the combat arms win these battles. Such being the case, a Chief of Staff should recognize this fact and give to his Chiefs of Combat Arms the authoritative status necessary in time of war.

I state unequivocally, and because my convictions are strong, and are based on that best of all teachers, experience, over a period both of peace and war, that unless this coördination between Chief of Staff, Chiefs of Combat Arms, and General Staff, is effected, and harmoniously functions in time of peace, confusion and delay will again result in the event of war, and will continue until it is reëstablished.

I would therefore earnestly recommend to those who at any time chance to be in authority, that they read the memorandum of 1918 fixing my status; and having done so, I would recommend with equal earnestness that the memorandum, modified to include all Chiefs of Combat Arms, but not modified as to principles, be adopted and promulgated as a doctrine continuously to be followed by the War Department in developing and maintaining the highest possible degree of combat efficiency in our army.

*F. A. *Journal*, January-February, 1940, p. 10.

Editorial Comment

Cavalry Heritage

For over three thousand years of recorded cavalry history, through the ancient cycle of heavy armor and back—*and now again, in another cycle of heavy armor and armament*—cavalry has faced the snows of winter, plodded through desert sands, climbed rugged and wooded mountains, crossed arid plains and has swum rivers in the execution of cavalry missions. It has suffered and again it has thrived!

Horse cavalry *in the modern sense*, however, first appeared in the Southern forces during our Civil War. The great efficiency of Southern cavalry, able to make sustained rapid marches across country; expert in scouting, and equally prepared to fight mounted or to use their firearms dismounted in battle, soon was realized by the Northern leaders, who, by the end of the war, utilized masses of cavalry with decisive effect. In the succeeding years of continuous fighting with the Indians in the West and in guarding our southern frontier, the characteristics of mobility, *firepower* and shock, as well as the *adaptability to all types of fighting*, were further developed. By constantly keeping *heads up* and abreast of modern trends, our cavalry with its unequaled battlefield maneuverability of effective fire power over all manner of terrain, continues to loom on the military horizon as an all purpose element of the *Army Combat Team*.

Let us, thus, pause in reflection and speculation. Just what does Frederick Remington's famous etching of the *Old Timer*, on our cover, symbolize for cavalrymen today? The record of the United States Cavalry and American history of the pioneering of the West and the expansion and defense of our frontiers obviously are synonymous. But what of the cavalry trooper? Our *Old Timers* were resourceful, virile, courageous, loyal, rugged, substantial and dependable—typical American plainsmen. With characteristic faith in their ability to use weapons and mounts; with a canteen of water, a sack of dried corn and a strip of jerked beef or venison in their saddlebags, they scorned hardship. Often alone on missions far removed from supporting elements, they welcomed adventure and combat. They stood for law and order and relentlessly imposed their will in its accomplishment, to the glory of our mounted service and our country. Yes, our *Old Timers* gave us a cavalry heritage; and an inspiration.

* * *

Regulations Quoted

Army Regulations } War Department
No. 345-105 } Washington, November 18, 1929.

MILITARY RECORDS

Historical Records and Histories of Organizations

7. *Regimental day.*—The commanding officer of each regiment, or other separate units similarly organized, will select a day in the calendar year which will be designated as regimental day, battalion day, company day, or similar appropriate name. This should be preferably a day noteworthy on account of some event in the history of the organization. It will be observed as a holiday by that regiment or organization for the purpose of commemorating the history and traditions of the organization and engaging in such suitable ceremonies as the organization commander may prescribe. Addresses on the history of the entire organization will be included. The selected day will be reported officially to The Adjutant General. As far as practicable, on that day all military duty for the organization concerned will be suspended. If it falls on Saturday, Sunday, or a holiday the day following or the day preceding will be designated as the official day.

The following are suggested as the basis of a program for observing that day:

a. General assembly of the organization.

b. Reading of citations and official commendatory orders or other commendations.

c. An address embodying a brief history of the organization and noting conspicuous events participated in by the organization.

d. An address by the commanding officer on the spirit of the organization and its future.

e. Addresses on the accomplishments of the men and officers of the organization.

f. Presentation of recruits to the colors.

g. Music and other forms of entertainment.

Following this, a brief program of celebration may be held by companies in their mess halls or assembly rooms.

Unit Anniversary

Unit	*Organized*	*Station*
1st Cavalry (Armored)	March 2, 1833	Fort Knox, Kentucky
2nd Cavalry	May 9, 1836	Fort Riley, Kansas
3rd Cavalry	May 19, 1846	Fort Myer, Virginia
4th Cavalry (H & M)	March 3, 1855	Fort Meade, South Dakota
5th Cavalry	March 3, 1855	Fort Bliss, Texas
6th Cavalry (H & M)	May 4, 1861	Fort Oglethorpe, Georgia
7th Cavalry	June 25, 1866	Fort Bliss, Texas
8th Cavalry	Nov. 23, 1866	Fort Bliss, Texas
9th Cavalry	July 28, 1866	Fort Riley, Kansas
10th Cavalry	July 28, 1866	Fort Riley, Kansas
11th Cavalry	May 5, 1901	Seeley, California Campo, California
12th Cavalry	June 29, 1901	Fort Bliss, Texas
13th Cavalry (Armored)	May 1, 1901	Fort Knox, Kentucky
14th Cavalry	March 5, 1901	Fort Riley, Kansas
15th Cavalry	Feb. 2, 1901	(Inactive)
16th Cavalry	June 3, 1916	(Inactive)
17th Cavalry	June 3, 1916	(Inactive)
26th Cavalry (PS)	Oct. 1, 1922	Fort Stotsenburg, P. I.
1st Cavalry Troop, Reconnaissance (Sep)	July 1, 1940	Fort Davis, Panama Canal Zone
1st Recconnaissanse Troop	Constituted July 20, 1940	Fort Devens, Mass.
2nd Reconnaissance Troop		Fort Sam Houston, Texas
3rd Reconnaissance Troop		Fort Lewis, Washington
4th Reconnaissance Troop		Fort Benning, Georgia
5th Reconnaissance Troop		Fort Custer, Michigan
6th Reconnaissance Troop		Fort Riley, Kansas
7th Reconnaissance Troop		Fort Ord, California
8th Reconnaissance Troop		Fort Jackson, S. C.
9th Reconnaissance Troop		Fort Bragg, N. C.

NOTE: Organization dates of our National Guard Regiments will appear in the next issue of The CAVALRY JOURNAL.

* * *

Remount Division of Quartermaster Corps Organized

In a move to simplify administration, the *Remount Branch* of the Supply Division, Office of the Quartermaster General, has been redesignated the *Remount Division*. Former sections of the Remount Branch will become branches in the new set-up. The Remount Division will be headed by Colonel E. N. Hardy. Colonel Hardy, a graduate of the United States Military Academy, was commissioned a second lieutenant in the Cavalry in 1911, and transferred to the Quartermaster Corps in 1937. He is a graduate of the Command and General Staff School and the Advanced Course, Cavalry School. Our salute to you, Colonel Hardy!

* * *

Rank and Address

Our circulation clerk has been working nights trying to keep abreast of the numerous changes in rank and address. Nearly all of his over 3,000 addressograph plates have been changed, not only once but several times, in recent months.

For a while we changed addresses upon receipt of War Department Orders. This method proved unsatisfactory as numerous officers desired having The CAVALRY JOURNAL mailed to their home addresses, which could be determined only at a later date.

If your CAVALRY JOURNAL envelope does not bear the proper name, rank and address, please send us a card giving the correct information so that desired changes can be made.

Army Wimmen

" 'Round and 'round she goes and where she'll stop, nobody knows!"

Doubtless, all of us are familiar with Major Bowes' opening salutation in his weekly amateur radio program—it serves to remind us of our cavalry "wimmen folk" today. Several of our cavalry regiments recently have changed station, with all of those backstage heartaches of leaving civilian and army friends; and reëstablishing homes under new circumstances and usually amongst strangers. This is true irrespective of rank!

Those of us with years of service behind us probably can remember many incidents when army families generously have "leaned backwards" in an effort to be hospitable to "newcomers"—moving at best is never pleasant, particularly for our women.

Let us, therefore, continue our effort to ease over the rough spots. With all mutually trying to be considerate the *middle of the road* surely can be found.

* * *

Our Journal in Demand

In anticipation of the popularity of our January-February issue of The CAVALRY JOURNAL, we provided 260 extra copies—which were sold almost immediately. One unfilled order was for 100 copies for instructional purposes.

* * *

Due to the increase in organizational strength, and increased demand by enlisted men for our JOURNAL, several units have ordered additional subscriptions for their DAYROOMS.

* * *

Army Song Book Now Being Distributed

The War Department has announced that distribution is being made of the new *Army Song Book*, containing words and music of sixty-seven popular favorites. All components of the Army will receive copies of the book. A smaller edition, which will be distributed to each individual in the service, and which contains only the words of each song, will be published soon.

* * *

Author's Credit

Upon the request of Lieutenant Colonel E. A. Hyde, F.A., announcement is made that due to a misunderstanding, the name of Lieutenant Colonel Hyde appeared as author of the article, "Artillery, Cavalry Division," in our January-February, 1941, issue. The author of the article was, in fact, *Major Charles D. Palmer, F.A.*

Apologies and regrets are in order, Major Palmer, and congratulations and thanks for an excellent article!

Antitank Troop, 1st Cavalry Division, to be Activated

The War Department has announced that the Antitank Troop, 1st Cavalry Division, Fort Bliss, Texas, will be activated as soon as housing, equipment and personnel permit the action. Not more than 28 men from already active units of the division will form the cadre for the new unit, while the balance of the personnel will be made up of selectees who have completed their basic training at the Cavalry Replacement Center, Fort Riley, Kansas.

Shoulder Sleeve Insignia

Shoulder sleeve insignia has been authorized for wear *only* by troops of units definitely assigned to a Division, an Army Corps, or an Army. Other units will not be permitted to wear such insignia.

Shoulder Sleeve Insignia—Armored Force

The design of a distinctive sleeve insignia to be worn by personnel of the Armored Force is made up with the World War Tank Corps insignia *on which is superimposed the insignia of the 7th Cavalry Brigade Mechanized.* The color make-up of the triangle of the World War Tank Corps insignia—*yellow,* blue and red—indicates the Arms of the Service from which the majority of the combat troops are drawn. *The tracks of the 7th Cavalry Brigade insignia symbolize the mobility of the Armored Force and the basic vehicle, the tank, which is the backbone of the combat power; the gun symbolizes firepower; and the chain lightning symbolizes speed and shock.* The sleeve insignia is applicable to all elements of the Armored Force, including the GHQ Medium Tank Battalions. The divisions will be indicated by the appropriate Arabic numeral placed in the apex of the triangle. The Corps troops will be indicated by Roman numeral and the GHQ Battalions will be indicated by Arabic numerals. There will be an olive drab border around the patch.

Announcement

(By request U. S. Army Information Service, New York)

"Army Information Service, 90 Church Street, New York City, the Public Relations Office of the Second Corps Area is located in the news center of the Nation. This office is being constantly called upon by the Metropolitan Press and other news media in the city, for information relative to the shoulder patches of various units of the Army. A number of organizations have sent in patches for our file as the result of direct requests. Funds are not available for the purchase of these items so a call is being made for donations from units of a sample insignia and shoulder patch for file and reference in this office. Also, if a brief organizational history and interpretation of the heraldic design of the insignia could be submitted, it would make the files more complete."

Editor's Mail

Editor, The CAVALRY JOURNAL:

Congratulations to Colonel Chamberlin on his article, "Crossing Rivers," in the January-February issue.

May I make a few comments, considering the fact that in Cuba in 1899 and in Mindanao in 1912 I and my troop did a lot of "Horse Swimming."

Colonel Chamberlin's idea of a training pit is one of the best yet. Such a pit should be made and used at every cavalry post. The hardest work in teaching horse swimming is to get horses to go ahead to swimming depth.

"Herd Swimming" I found too difficult, the only time I tried it. That was at the Cagayan River in Mindanao. The stream was about two hundred yards wide. I had a large group of men on the far side and a few horses and mules that had been led across. But the herd would not go in. I laid the trouble to the fact that we tried to cross at a spot where we had been watering for about a week. We finally got the horses across by towing some with bancas, leading others out into swimming depth with good swimmers (men) mounted on good swimming horses getting them started across and turning them loose.

Individual swimming: hanging on to the tail is the best method if the horse will go ahead across. If a rider slips off to swim (or be towed) alongside, I favor the downstream side. I have personally had a horse go over backwards with me swimming alongside and have seen other horses do it. In each case the horse turned upstream as he went over. Not so good for the upstream trooper!

We had little success in trying to guide horses by splashing water in their faces—a "leading rein" (as distinguished from a "bearing rein") worked very well.

Tight cinches are extremely important. If a packed saddle slips back to the loins the horse will turn over. Horse and rider are both apt to be drowned.

Incidentally, considering swimming, mounting and dismounting, isn't it about time we abandoned "horse-show" necks and gave the soldier a horse's mane to use for various purposes?

I agree heartily with Colonel Chamberlin's closing paragraph. Many times I have told civilians that no motor vehicle has yet been made that can cross a stream three feet deep (there are claims of such), but horse cavalry can cross rivers two hundred yards wide and ten feet (and over) deep.

Signed: C. A. ROMEYN, Colonel, Cavalry, Retired.

Deadline

The deadline date for the May-June issue of The CAVALRY JOURNAL is May 10, 1941. Material received subsequent to that date cannot be considered for appearance in that issue.

Please address all communications for *The Cavalry Association* and The CAVALRY JOURNAL to 1624 H Street, N.W., Washington, D. C.

The Remount Service

By Colonel Edwin N. Hardy, 2.M.C.

MOUNTED units, the Remount Service, and the Veterinary Corps, must be on their guard not to accept entirely the method of supplying animals that was used in the stabilized situations of World War I. We must all recognize that military operations of today are of a very mobile character and that if we should depend upon the methods used in France in 1918, we would not be able to keep front line units supplied. This is true of other items as well as animals. As a consequence, Remount installations in the Theater of Operations must be such that they can be rapidly established and moved as circumstances require. We must not get the idea that elaborate permanent or semi-permanent remount depots can always be established. It will be necessary to improvise and to use any method which will permit the uninterrupted supply of suitable animals to mounted units operating in the face of the enemy. Due consideration will have to be given to attacks from the air, and this will require an avoidance of congestion. Existing stockyards, stock ranches, etc., must be utilized as far as practicable and whenever indicated. Very often the situation will not permit the time necessary to build remount depots such as were used in France.

In normal times our thought with reference to remount depots is confined principally to our three permanent remount depots. In times of emergency involving actual field operations against an enemy, there will be a necessity for additional remount depots of various types. The plans of the Remount Division provide for depots of various types, and general instructions as to their operation.

Remount Depots

In time of war, remount depots may be classified as follows:

a. Remount depots in the Zone of the Interior—These depots would include our three permanent depots and such additional depots as may be required in the Zone of the Interior to receive newly purchased animals and to put them in proper condition as to health, flesh and training for issue to troops not engaged in active field operations, or to other depots. In other words, remount depots in the Zone of the Interior would perform the functions now being performed by our three permanent depots, except that various schools would be conducted at the various depots to cover instruction for officers and enlisted men in various subjects such as horseshoeing, saddlery, animal administration, etc.

b. Field remount depots in the Theater of Operations—These depots may vary, according to distance from the front lines, from camps with nothing but picket lines for the maintenance of animals to well-established depots of permanent or semi-permanent construction, very much like depots in the Zone of the Interior. The purposes of field remount depots are to receive animals from depots in the Zone of the Interior or from veterinary hospitals and to issue them as may be required to front line units. Animals issued from field remount depots must be in excellent health and flesh, in hard condition, and sufficiently trained for immediate use of mounted units in active operations. Schools may be conducted as a part of a field remount depot, depending upon circumstances. The main difference between the functions of a field remount depot and a remount depot in the Zone of the Interior is that a field remount depot must issue horses sufficiently conditioned and trained for immediate use of mounted units in active operations. Field remount depots, therefore, require a greater number of men so that all horses not on sick report may be ridden or driven for conditioning and training every day.

When animals with front line units are no longer fit for use with those units on account of sickness, injury or wounds, they will be evacuated by Veterinary Corps units to veterinary hospitals and there maintained until they no longer require hospitalization. These animals are then issued to field remount depots to be put in fit condition for issue to front line units. It will therefore be seen that field remount depots should be conveniently located with reference to veterinary hospitals.

c. Remount depots at Ports of Embarkation—These depots may be in the Zone of the Interior or in the Theater of Operations. In either case they are for the purpose of receiving animals from depots or units for trans-shipment overseas. They resemble in their nature remount depots in the rear areas of the Theater of Operations and their capacity is regulated by the estimated rate and volume of shipments required to sustain operations overseas.

d. Remount depots at Ports of Debarkation—These depots may also be in the Zone of the Interior, or Theater of Operations, depending upon circumstances. They are for the purpose of receiving animals shipped by depots at Ports of Embarkation for temporary maintenance until they can be issued to some depot in the overseas area. Ordinarily a depot should be located within a short distance of the Port of Debarkation for the purpose of receiving animals from depots at Ports of Debarkation and to get them ready for issue to troops. Consequently, depots located immediately at Ports of Debarkation may ordinarily be designed so as to permit

the maintenance of animals only for a few hours, or at most, for a few days.

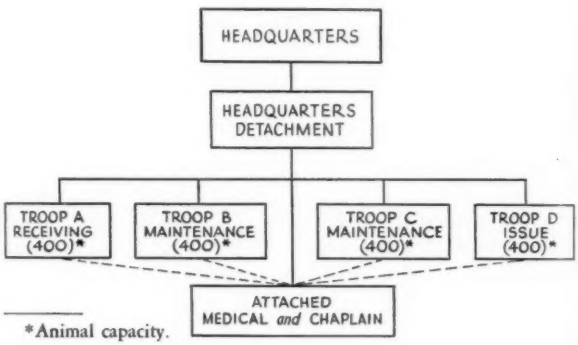
The Open-Air Plan

There is a general concurrence among horsemen of experience that the "open-air plan" of maintaining animals, if properly guarded by efficient animal administration, is better than a plan which provides for stalls for all animals. The open-air plan is more economical, the plant is easier and quicker to construct, simpler to operate, and prepares animals for active field operations in the open. Such animals are toughened to prevailing climatic conditions, and are also strengthened and conditioned by the large amount of voluntary exercise they obtain incident to their freedom in the open air, provided that such areas are sufficiently large. As a consequence, these animals can be counted upon to fare better under field conditions and to be more immediately available for issue to troops than animals maintained in stalls. The Remount Service for various reasons has been operating on the open-air plan in its present program, which involves only the use of our three permanent remount depots. To date, the open-air plan has proved very satisfactory; our administrative losses in animals since July 1, 1940, have been approximately two per cent, which is considered excellent in view of the fact that our losses from now on should be appreciably lower. However, consideration should be given to the fact that the open-air plan at our three permanent remount depots has provided a large area per animal. In depots of smaller area, conditions would not be as favorable and some sort of shelter would have to be provided in order to keep animals out of deep mud in inclement weather. A large number of animals congested in a small area during muddy weather brings about a very unfavorable situation prejudicial to the health and well-being of the animals. Furthermore, if such a condition is allowed to exist too long, it will result in serious infection of the horses' legs from the knee down. A great deal of trouble was experienced in this respect, during World War I, in France. There are so many considerations which have to be given to the administration of animals in large numbers, that it is impracticable in the scope of this article to even attempt to enumerate them. In any case, the solution is to have personnel in charge who are experienced in animal administration and who have sufficient knowledge to enable them to anticipate pitfalls and thereby take steps to avoid them.

Horses Must Be Conditioned

Since remount depots in the Theater of Operations must supply front line units with horses ready for active duty, such horses must be ridden and conditioned every day. Under such circumstances it would not be necessary to put as much dependence in animals obtaining voluntary exercise in large areas as is done on depots in the Zone of the Interior. Animals being worked every day can be maintained satisfactorily in a stable shed or in the open while not being used. In all cases, however, arrangements must be made so that animals can obtain a generous supply of good forage and reasonably clean and dry places for their maintenance while not being used. Undoubtedly, in many cases in the Theater of Operations, picket lines will be used to take care of the animals when they are not being ridden, the only protection from the elements being a horse cover. This is all they would get when in campaign and they may just as well learn how to stand it before being put on campaign duty.

Quartermaster Squadron, Remount
T/O 10-95



*Animal capacity.

Authorized Strength:

	Officers	*Men*
Hdqrs. & Hdqrs. Det.	3	14
4 Troops	16	660
Attached Medical	8	44
Attached Chaplain	1	..
Total	28	718

Personnel

In considering remount depots, attention is invited to the manner in which the various depots are operated with reference to personnel. Permanent depots and additional depots in the Zone of the Interior are required to be operated by Quartermaster Detachments with such additional civilian personnel as circumstances may require. The number of civilian personnel required is usually in proportion to the number of animals being processed at a depot. Remount Squadrons and Remount Troops (Tables of Organization 10-95 and 10-97, November 1, 1940) provide the personnel for operating field remount depots in the Theater of Operations. They may also be used to operate depots at Ports of Embarkation and Ports of Debarkation if circumstances justify. In view of the fact that animals issued from field remount depots should be sufficiently trained and conditioned so as to permit their immediate issue to troops engaged in field operations, it is necessary that all animals be worked every day and that field remount depots have more men in proportion to the number of animals

than other depots. For this reason a Remount Troop of 165 men is supposed to be capable of operating a depot of 400 horses, while a Remount Squadron composed of 4 Troops operates a depot of 1,600 horses. This arrangement is convenient as it provides for the establishment of depots of various capacities with appropriate personnel to operate them. Depots may be conveniently increased or decreased in increments of 400 animals while maintaining the integrity of the basic unit, which is the Remount Troop. Where two or more Troops are required to operate a depot, a field officer and necessary staff should be provided; where two or more Squadrons are required to operate a depot, an appropriate field officer and necessary staff should be provided.

Depot Operation

In general, all depots should be operated in three sections, as follows:

a. Receiving.
b. Maintenance.
c. Issue.

a. As far as the terrain will permit, each of these sections should be located as a unit. In a field remount depot of a capacity of 1,600 animals, the plan of operation would probably call for the receiving area being operated by one Troop which would care for about 25 per cent of the depot capacity, or 400 animals. In this area there should also be located the veterinary installations; not veterinary hospitals, however, as all animals requiring hospitalization are sent to separate veterinary hospitals. The receiving section would isolate newly received animals for at least three weeks, treat minor injuries and sickness, dip all animals as soon after receipt as practicable, and prepare all animals for issue to the maintenance section.

b. The maintenance section would probably be operated by two Troops and would have charge of approximately 50 per cent of the depot capacity, or 800 animals. The purpose of this section is to put animals in an excellent state of health and flesh, and to progressively harden them until fit for issue to front line troops. In order to accomplish this, there must be a proper balance between feeding, exercising and grooming.

c. The issue section would probably be operated by one Troop caring for about 25 per cent of the depot capacity, or 400 animals. The purpose of this section is to receive from the maintenance area about 25 per cent of the most fit animals for issue, and to continue their processing with the idea of preparing them for issue in the least practicable time. Animals issued from the issue section must be freshly shod, neatly trimmed, and fit in every way for immediate field duty. According to the number of animals that may be in any one section at any one time, adjustments may have to be made in the personnel assigned to each section. This can be taken care of by temporary assignments from one section to another, but it should always be accomplished by an observance of the integrity of units and not by temporary assignment of individuals. For example, if a squad is required in the maintenance section, a complete squad with its squad leader should be sent; if a platoon is required, a complete platoon with its platoon leader should be sent.

Plans are now being effected to organize and train a Remount Troop each at Fort Robinson, Nebraska, and Fort Reno, Oklahoma. Each Cavalry Division requires at least one Remount Squadron to take care of its animal supply problems when in active campaign. Each of these two Troops will be used, therefore, as a nucleus upon which to expand into a Squadron if and when required.

A group of young horses on a Western range. Every horse in this picture was sired by a Remount stallion.

The Armored Force

Editor's Note: The Cavalry Association has extended an invitation to The Armored Force to share its space in The Cavalry Journal. Approximately 163 Cavalry Officers (Regular Army) at present are on duty with The Armored Force in prominent command positions. In combat it is anticipated that our Cavalry and The Armored Force will work in close coöperation. In furtherance of this objective therefore it obviously is mutually advantageous that we respectively should keep informed as to each other's activities and development and that our present friendly and harmonious relationship be perpetuated.

The Armored Force School

By Colonel Stephen G. Henry, Infantry, Armored Force

THE organization of the Armored Force in July, 1940, brought with it the immediate problem of training a vast number of technicians.

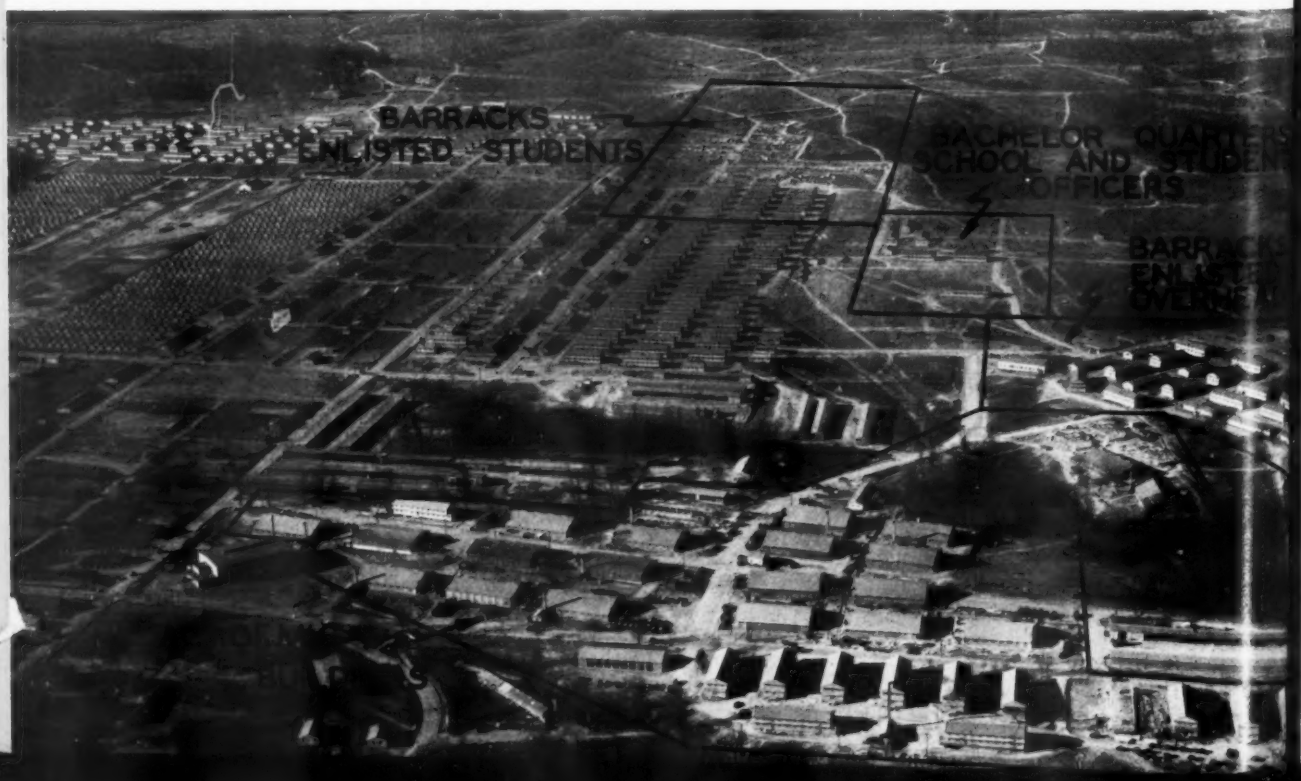
While it is true that there were specialists in the units of the Force which had been active previously, and many of these were school-trained, the activation of new units and the expansion of others threatened to drain this supply below any reasonable minimum.

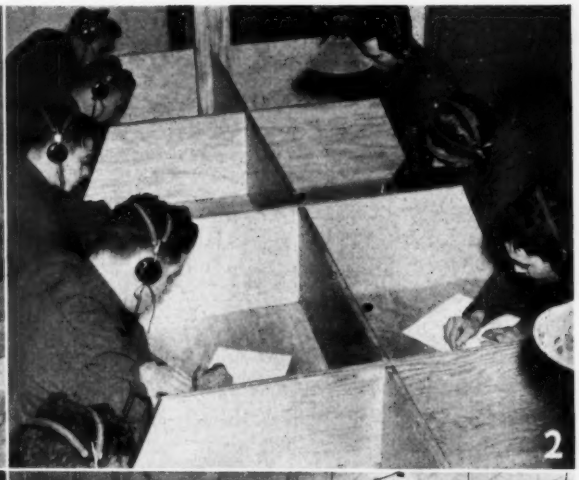
A single armored division contains 1,149 combat and 2,235 non-combat vehicles. Of these, 747 are equipped with radio. A General Headquarters Reserve light tank battalion has 160 vehicles and 66 radios, a medium battalion, 186 vehicles and 73 radios. It was apparent by simple arithmetic that the number of operating and maintenance personnel for this matériel, plus the clerks needed to administer the new units, would reach into thousands. In addition, there was an immediate shortage of trained junior officers able to handle the duties of maintenance and communication.

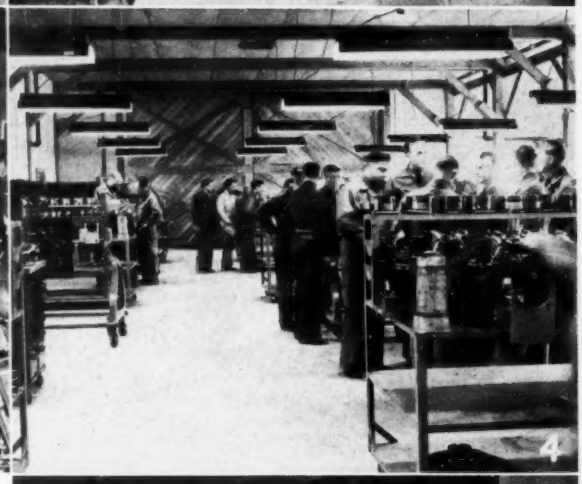
Certainly existing service schools, already overtaxed to produce specialists for divisions already planned, would be unable to furnish the Armored Force anywhere nearly these numbers. Besides, it was realized at once that Armored Force officers and enlisted men alike face different problems, both in maintenance and operation, from those in other branches.

The answer was the Armored Force School, estab-

Area occupied by buildings of the Armored Force School

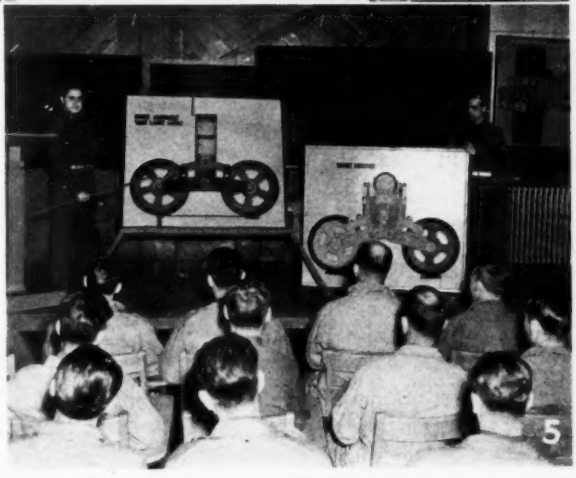






ARMORED FORCE SCHOOL

1—Students receiving instruction in tank department. 2—Students in radio section, communication department. 3—Section of motorcycle department. 4—Engine section, tank department. 5—Class instruction, tank department.



lished by directive of Major General Adna R. Chaffee, Chief of Armored Force, on August 7, 1940.

The Tank School at Fort Benning, with its equipment, was made available at once. The 1st Armored Division had been conducting some instruction at Fort Knox and this personnel could be utilized.

The problem of a physical plant was the most urgent. Land along First Avenue and to the north of the avenue was allocated to the school but the only building which could be used for a headquarters was an old summer mess hall. It was in this structure that the Armored Force School was established.

It was here, also, that the plant was laid out and the curriculum planned. An analysis of the requirements of the Force, as then constituted, showed that about 800 officers and 7,200 enlisted specialists should be produced in 12 months. The physical plant of the school was laid out for this capacity.

The instructional system was broken down into eight departments. These were tanks, wheeled vehicles (including half-tracks), communications, tactics, gunnery, field engineering, motorcycle and clerical. Motorcycles were placed in a separate department because of the intensive and highly specialized use of this machine in the Armored Force.

The War Department officially authorized the establishment of the school on September 20, 1940, with an

initial capacity of 200 commissioned officers and 1,800 enlisted men. Authorization was given also to utilize civilian trade schools to step-up the production of specialists in the emergency. Already a survey had been made of trade schools within a radius of 400 miles of Fort Knox, and equipment and curricula studied with relation to their application to the needs of the Armored Force. Five schools, located in Chicago, St. Louis, Cincinnati and Valparaiso, Indiana, were selected. On October 9, 1940, details totaling 731 enlisted men from the 1st and 2d Armored Divisions were enrolled in these schools.

The trade school courses were for automotive mechanics, Diesel mechanics, radio operators, radio electricians, welders, and machinists, and ranged in length from six weeks for welders and machinists to sixteen weeks for radio operators. Included in the plans for these trade school students were finishing courses at Fort Knox where the instruction received would be given practical application to Army equipment, and final examinations held to determine whether the students were able to meet the standards set in the regular courses at the Armored Force School.

In the meantime at Fort Knox construction and planning were going on at top speed. The capacity of the school, set by the War Department, was approximately one-fourth of the requirements of the Armored Force. It was planned to operate the school in four cycles of three months each to produce the quota. The first cycle was scheduled to run from November 4, 1940, to January 31, 1941.

On November 4th the Armored Force School enrolled the first students in its own plant. There were 219 commissioned officers and 1,619 enlisted men from the 1st and 2d Armored Divisions, and the 70th Tank Battalion, Fort Meade, Maryland. Included were ten enlisted men of the United States Marine Corps, from the bases at San Diego, California, and Quantico, Virginia. For the officers there were courses in communications, tank maintenance and wheeled vehicle maintenance. For enlisted men there were classes for radio operators, radio electricians, motorcycle mechanics, motorcycle operators, cryptographers and clerks. In many cases these classes met while carpenters still were building walls around the students.

A great deal of attention was given to the curricula of the officers' courses in order that they might not be too narrow. All the courses, regardless of the technical specialties of the students, included work in gunnery, tactics, field engineering and motorcycles. A similar policy was set up for the tank and wheeled vehicle mechanics' courses for enlisted men. Before graduation all were scheduled to work in gunnery, field engineering and motorcycles. The special problems involved in the tactical operation of motorcycles were recognized by including a week of study in field engineering. In this week instruction was given in recognition of enemy installations such as road blocks and tank traps that these men were liable to encounter.

A tentative plan to include a general course for officers of all grades newly assigned to the Armored Force was discarded. The need for orientation or "indoctrination" study was recognized, but it was decided that the Armored Force School would confine itself to the production of specialists.

There necessarily was some experimentation in the first cycle of training. For instance tank and wheeled vehicle operation was scheduled and taught in the first courses. This was found to be impractical and subsequent plans eliminated this subject. It was found that vehicle operation except motorcycle could be taught more efficiently in units. Later, even motorcycle operation was discarded.

Similarly the course for cryptographers in the Communications Department was consolidated with the radio operators' course.

Because of the pressing needs of the two armored divisions, then being trained, the first officers' classes at the Armored Force School were composed entirely of reserve officers assigned directly from their respective corps area in quotas of 25 each. Upon arrival at the school the students were assigned to the departments for which they seemed best fitted. Later this policy was not necessary and officers are assigned directly by their respective divisions, or in the case of the 70th Tank Battalion, by the commanding officer of their unit.

Very soon after the school opened in November the projected expansion of the Armored Force made all the production plans of the school obsolete. The enlargement of the Armored Force to six divisions, 15 Regular Army GHQ tank battalions, and 10 National Guard GHQ tank battalions multiplied the requirements for specialists.

The expansion of the physical plant of the Armored Force School to care for the production of these additional quotas was obviously impracticable if not impossible in the time allowed. Besides, it would certainly leave the school with an enormous excess capacity whenever the emergency was over. Another problem was the procurement of more technical equipment, which appeared insurmountable.

Experience with the three-months-cycle system had indicated that the entire plant was not being utilized all of the time. For instance, students who had progressed to the chassis section of the tank department no longer needed the engine section equipment and it lay idle. A similar condition prevailed in nearly every department.

Remembering that the mass production methods of the auto industry do not await the completion of one unit before starting another, a plan was made to utilize all of the equipment of the school all of the time. The major courses were broken down into phases. The tank department, for example, was divided into nine phases of eight days each. In that department there was room

for seventy students in each phase. Therefore, 630 students could be given training at the same time.

To augment further the capacity of the school a two-shift day was directed. The first shift was scheduled from 6 AM to 12 noon, and the second from 1 PM to 7 PM, both shifts to attend school six days a week. This involved a loss of only three hours a week from the former 39-hour schedule. It required, however, considerable study to reduce administrative hardship on the organizations of the 1st Armored Division with men in school. It was found best to schedule 1st Division students to morning classes and those on detached service from Fort Benning and Fort Meade to the afternoon.

The same procedure was followed with the officers' classes except in the communications department. Officers in tanks and wheeled vehicles were divided between tactics and gunnery on a single shift basis until they were ready for work in their principal departments. They were then to go on a two-shift schedule until work in that department was completed.

All these changes were made and arrangements completed before the first cycle of operation of the school ended on January 30th. In the meantime, to meet the need for gunnery officers, particularly for the new 37-mm. pieces and the Thompson submachine gun, a course intended to qualify officers of the Armored Force as instructors was scheduled and carried through.

During January, at the request of the War Department, the Armored Force School stretched its facilities to accommodate a class of automotive mechanics from the 4th Infantry Division at Fort Benning.

By January 30th, the Armored Force School had graduated 279 officers and 2,083 enlisted men from all departments. It was prepared to plunge into mass production of specialists in totals that would have looked astronomical a few months before.

The physical plant of the school, non-existent a few months ago, has grown to 299 buildings, 46 of which are used exclusively for instruction. There is a theater with a seating capacity of 1,038. The operating and instructional personnel has grown to 182 officers and 1,847 enlisted men. Construction is still in progress on additional barracks, mess halls and recreation buildings for students on detached service from other posts. The establishment includes a branch officers' club, a branch post exchange, and a separate post office.

By means of the two shift system and weekly increments of students the capacity of the school has been raised until the quota of 1,440 officers and 21,000 enlisted specialists will be met at the end of the first year of operation. Beginning about May 1, 1941, graduates will be emerging from the school and returning to their units at the rate of 430 every Saturday.

Stresses due to shortages of equipment are gradually being eliminated. Much technical machinery has been delayed by the pressure of demand for war supplies, thus multiplying instructional problems.

Nothing, however, is delaying the production of Armored Force Specialists. In great industries raw materials flow through the plants, are worked on by skilled technicians, and emerge as finished articles. In the Armored Force School, the untrained man is the raw material. He moves through the schools where instructors impart detailed information and teach operations which he later will perform in his organization. He progresses from phase to phase and emerges with the basic training necessary to work at his specialty.

He is not an expert when he leaves the Armored Force School. Only the man himself and the opportunities given him by his organization commander can make him that. But he is qualified to do his part in the Armored Force.

Armored Force Library

The Armored Force School at Fort Knox, Kentucky, has established a school library. It has been requested by the school commandant that all officers who have books on the subject of Tanks, Armored Cars, Motorcycles, Motors and related subjects in general, which they no longer need, please send them to *The Librarian, The Armored Force School, Fort Knox, Kentucky.*

Sub-Caliber Devices at Fort Knox

*By Lieutenant Colonel L. D. Tharp, Infantry**

THE efficient training of personnel for large caliber weapons requires sub-caliber equipment that will provide gunnery practice at minimum cost and with minimum range safety requirements.

An efficient sub-caliber device should:

a. Fire a small caliber inexpensive cartridge.
b. Provide the same ballistic characteristics as the shell it represents.
c. Require the same operating procedure as in combat.
d. Be simple in design; inexpensive, practical and stable in operation, and easy to mount and adjust.

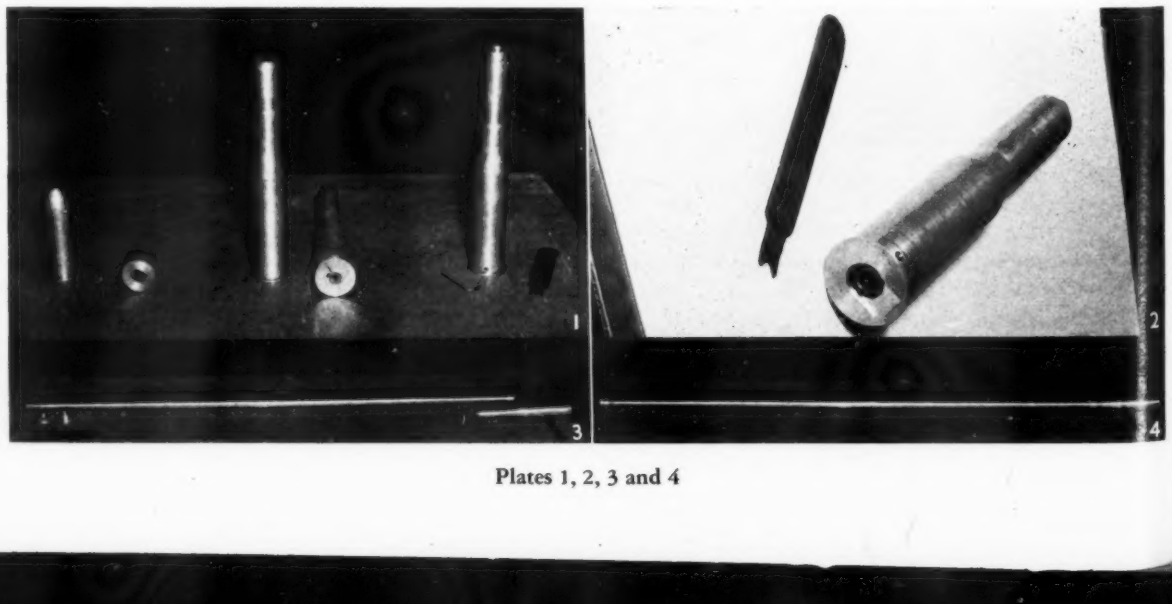
One of the most effective designs which meets many of the above requirements consists of a small caliber rifle or pistol barrel inserted in a brass or bronze replica of a standard shell. (See Plate No. 1.) Here are shown a .45 caliber pistol barrel in a brass replica of the old 1916 model 37-mm. shell; a .22 caliber barrel in a bronze replica of the shell for a modern 37-mm. M-3 or M-5 antitank or tank gun, and a .30 caliber barrel in another replica of the same shell.

The first of these sub-caliber devices was designed and used at Fort George G. Meade, Maryland, by the writer in 1920 and is believed to be the first of this type. It gave excellent results when used in the old six-ton tank in combat training. A .45 caliber pistol barrel was used with tracer ammunition in order that the strike of the bullet could be observed by the gunner and proper correction for errors in aim and range estimation be made. The same design with a .30 caliber barrel was used for the six-pounder tank cannon in the 40-ton Mk. VIII tank with equally good results. Now there is a demand for a sub-caliber device for our latest 37-mm. antitank and tank guns, due to the shortage of ammunition and the lack of ranges meeting the safety requirements for this weapon.

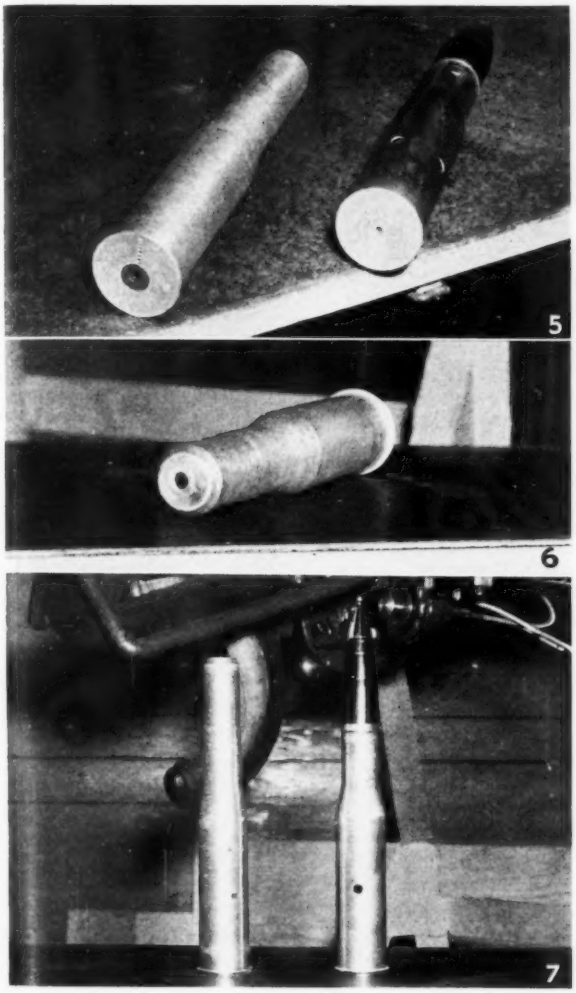
Therefore, at the Armored Force School the Gunnery Department has designed and obtained twenty of the .22 caliber sub-caliber devices for the 37-mm. M-5 tank gun. These are in daily use on the indoor miniature range, and provide excellent training at minimum cost. They meet practically all of the requirements of sub-caliber training. They fire inexpensive cartridges, provide the same mechanical training required to operate the gun in combat, are simple in design, inexpensive, practical and stable in operation, and require no complicated mount or adjustment.

A rough casting of the general outline of a 37-mm. M-51 shell is made so that the walls will be about 3/16 of an inch thick when finished. Then it is machined to the exact size of the 37-mm. shell from the base to the rotating band on the projectile. From the rotating band to the nose it can be of any convenient shape that will allow proper clearance in the gun.

*Gunnery Department, The Armored Force School, Fort Knox, Kentucky.



Plates 1, 2, 3 and 4



Plates 5, 6 and 7

Top—Rear view of .22 caliber device and standard 37-mm. shell. Note sighting mark on rear face of casting. Center —Front of .22 caliber sub-caliber device. Bottom—Comparative sizes of casting and standard 37-mm. shell

A cheap .22 caliber rifle barrel about 24 inches long is then cut into two pieces of approximately 12 inches each and a smooth surface about one-half inch long is turned on each end. Also, a small shoulder is turned at the rear end of the barrel to act as a stop when the barrel is forced into the casting.

Since the 37-mm. gun is a center-fire weapon and the .22 caliber cartridge is rim-fire, the barrel must be offset .060 of an inch at both ends to permit the center-fire firing pin to strike the rim of the .22 cartridge and still keep the barrel parallel with the axis of the casting.

Therefore, the casting is reamed .060 of an inch off center at each end, sized to a press fit for the barrel and the barrel pressed home. A one-eighth inch Allen set screw is inserted at the breech end of the casting to hold the barrel in position. The rear end of the barrel should be flush with the base of the casting for proper head space adjustment.

To prevent rupture of the .22 caliber cartridge, the standard firing pin spring in the 37-mm. M-5 gun is replaced with one just strong enough to detonate the small shell. The cost of this device complete with barrel is $18.00 when manufactured in lots of twenty.

For convenience in rapid manipulation fire, a supply of two shells for each gun is advisable so that one shell may be loaded while the other is being fired. One .22 rifle barrel cut in two will provide barrels for two castings. When all the shells are assembled they must be targeted in and marked on the rear face to make certain that the casting will be placed in the breech of the gun in approximately the same position each time. If extreme accuracy is required, this is necessary because .22 caliber rifle barrels are not true and a new rifle barrel will fire a circular pattern about two inches in diameter at 1,000 inches, if rotated. At the Armored Force School all castings are targeted and marked on the rear face so that a bullet from any casting will strike a one-inch paster at 1,000 inches with the same telescopic sight setting.

The same general principle is applied to the fabrication of the .30 caliber sub-caliber device except that the barrel is not offset and the rear opening in the casting is threaded to fit a water-cooled machine gun barrel. The barrel is cut about 13 inches long so that it extends about one-half inch beyond the nose of the casting. Two plates sized to fit any standard wrench are cut on the muzzle-end of the barrel to facilitate turning for head space adjustment. An Allen set screw is used to fix the barrel in place when the proper head space adjustment has been determined. The base of the casting is cut to facilitate extraction of the empty shell. A hand extractor and Allen wrench are provided as accessories. (See Plate No. 2.)

The muzzle blast of the .30 caliber cartridge will burn and pit the 37-mm. barrel if adequate protection is not provided. This is accomplished with a tube or pipe, 1-7/16 inches outside diameter and 1⅛ inches inside diameter. The rear end of the tube is provided with a ¾-inch brass collar which engages the lands in the 37-mm. barrel, thus preventing the tube from passing entirely through it. The front end of the tube is provided with a brass collar and nut which are used to lock it firmly in the barrel. That portion of the sub-caliber device from the rotating band to the nose is trimmed down to fit inside the tube so that the muzzle of the .30 caliber barrel projects about 3½ inches into the tube. A spanner wrench is provided to tighten the muzzle gland nut. (See Plates 3 and 4.)

Since the trajectory of the 37-mm. shell and the .30 caliber cartridge are very similar this device affords excellent training in firing at field ranges.

Tests with the .30 caliber sub-caliber device have not been completed and therefore further modifications may be indicated.

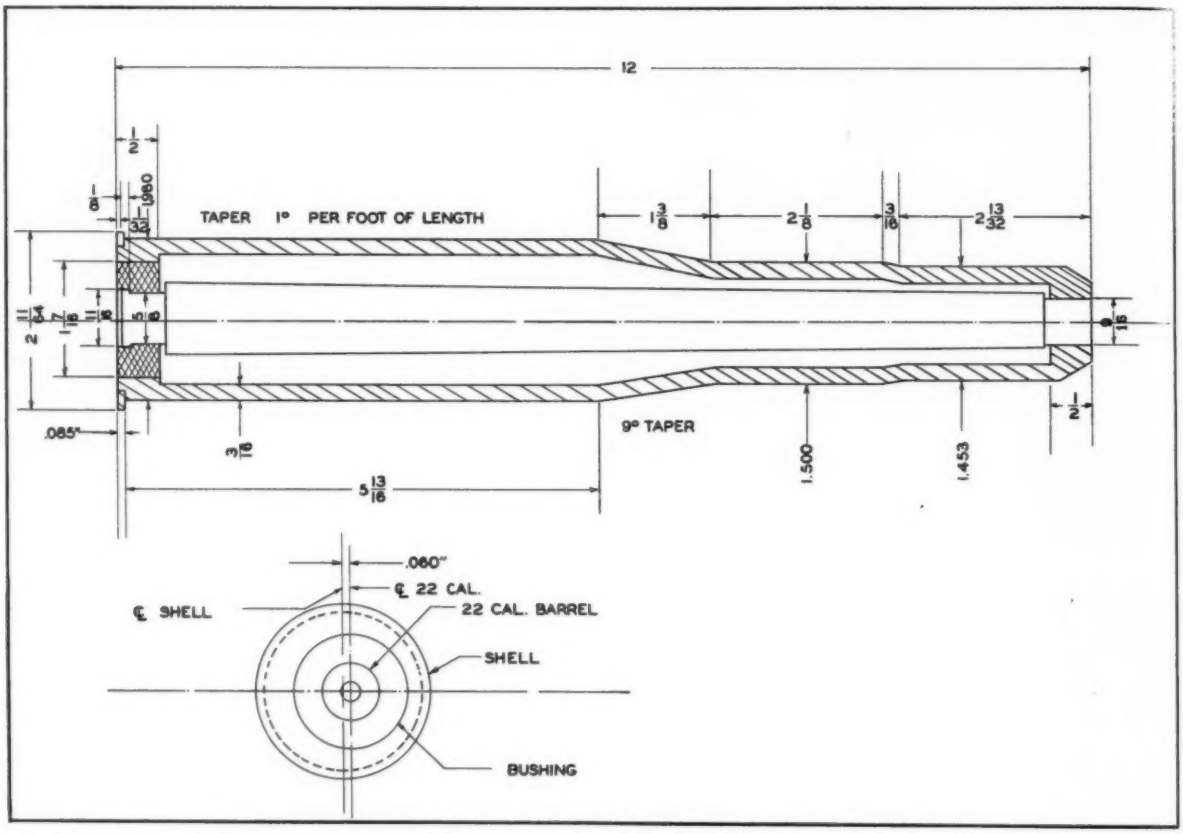


Plate 8: Details of casting .22 caliber sub-caliber

All devices of this type provide actual training in loading and serving the gun under virtually the same conditions as those required in the field and are, therefore, very satisfactory for combat training. They are now in constant use at the Armored Force School with excellent results. If desired, further details may be obtained from the Gunnery Department of The Armored Force School at Fort Knox, Kentucky.

★ ★ ★

First Armored Regiment Has 61 Battle Honors

The First Armored Regiment (L) is the oldest regiment of cavalry in the United States Army and was the first regiment of cavalry to be completely mechanized.

In 1833, as the result of a need for a mounted force to protect the pioneers who were pushing westward across the Mississippi River into the Indian country, Congress authorized the organization of "The United States Regiment of Dragoons," which became the "First Regiment of Dragoons" in 1836, and the "First Regiment of Cavalry" in 1861.

The outbreak of the Civil War found the Regiment in Arizona and on the Pacific Coast. The Regiment joined the Army of the Potomac and fought with that army in all of the principal battles of the Civil War. With the close of the Civil War the Regiment resumed its Indian campaigns fighting Apaches in Arizona and various other tribes throughout the West.

From its far western posts the Regiment was assembled at Chickamauga for the Spanish-American War, took part in that war and the Philippine Insurrection which followed, and returned to the United States in 1903. The Regiment served on the Mexican Border during the World War and in 1933 became the first regiment to be completely mechanized, being stationed at Fort Knox, Kentucky.

Of streamers carried on the regimental standard, the 1st Armored Regiment (L) is authorized to bear 61 Battle Honors, a greater number than any other regiment in the United States.

The Second Armored Division Grows Up*

LIKE MINERVA, the 2d Armored Division sprang fully matured, but in reduced size, from the ambrosial forehead of Major General C. L. Scott. The day of this epoch-making headache was 15 July, 1940.

At birth it consisted of little more than the 66th Armored Regiment and a few cadres from other units, 2,202 men and 99 officers in all.

Now, in March, 1941, some eight months later, it consists of 10,121 men and 776 officers. In addition it is training some 4,875 men and 687 officers to act as cadre for the 3d Armored Division which the best medical advice now believes will first see the light at the new laying-in hospital at Fort Polk, Louisiana, some time in April. In passing one may note that the said laying-in hospital is also in the process of creation at the present moment.

Obviously, it is impossible in the limited space and more limited time available, to trace all the stirring events which have transpired since last July.

From its beginning the Division has been imbued with General Chaffee's belief that an emergency exists and that it is its duty to be ready for action at any time.

To this end General Scott, and since his departure for Fort Knox on November 3, 1940, General Patton has stressed both unit instruction and division training so that by working from both ends, so to speak a maximum of results will be obtained in a minimum of time.

From the unit training standpoint emphasis has been placed on combat effectiveness. For example, after their second lesson, drivers are taught to function with the ports closed; after the third lesson they are required to maneuver in formation by platoons using only flag signals. Also every new soldier is taught to manipulate and fire all types of weapons during the first month of his service.

*By G-2, 2d Armored Division, Fort Benning, Georgia.

Scout car stripped for action

The command has been impressed with the fact that the expression "Fire and Movement" is not just a catch phrase but a vital necessity. In other words that they are not to *FIRE OR MOVE,* but to *FIRE TO MOVE,* for the Division believes in the words of the immortal Farragut that, "The best Armor is a rapid and well directed fire."

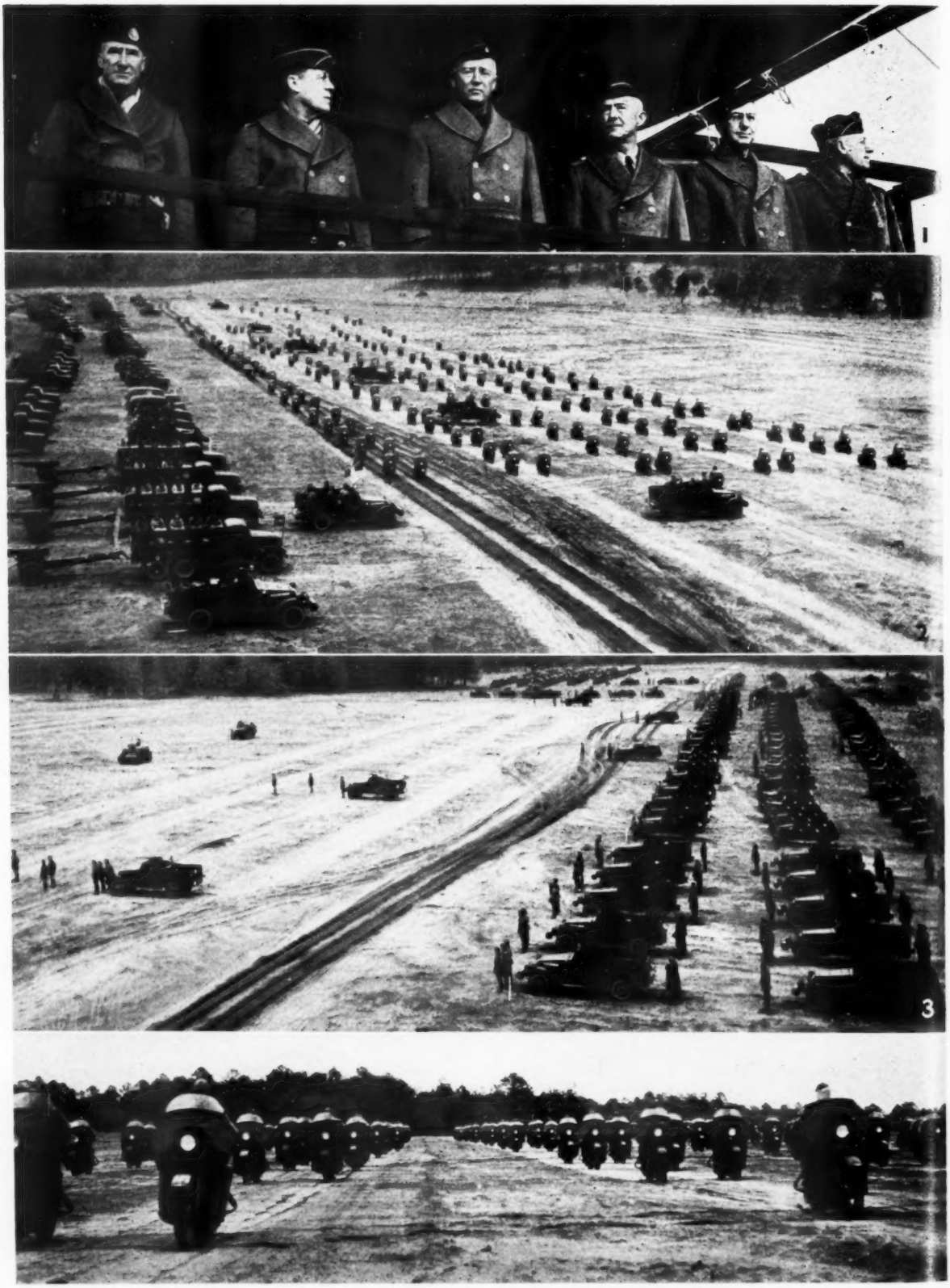
In order to give reality to this belief General Scott laid out 15 ranges, of which 4 are combat, 4 are moving target, four are moving vehicle, 2 are thousand inch, and 2 are pistol. One range serves both thousand inch and pistol. The thousand inch ranges, it should be noted, are capable of training 340 men at one time.

In order to give tactical facility in the use of this fire a course has been set up to demonstrate, first by platoons, then by companies, and so on. In staging these demonstrations each type of platoon, etc., has worked out a typical problem and after a rehearsal has demonstrated it to as many officers and men as could profitably observe. These problems have illustrated the action of the Reconnaissance Battalion and of the Reconnaissance Companies of the Light Regiments. Similarly, the machine gun companies, the tank companies (both light and medium), the infantry, the artillery, and the engineers have all given several examples of how their specific missions are to be accomplished.

It has been stressed that the solutions presented are not the only ones possible but rather that they are intended to provide a datum plane from which further developments may be carried on. In addition to the above the Division as a whole has participated in seventeen problems. The details of these are shown in Table I. One of the Division exercises, played in several phases, has been used as the build up for a tactical demonstration in which the whole division participates. The final phase, which is the demonstration, shows a coördinated attack, using all weapons—including bombardment aviation—followed by the forcing of a river by fording under the cover of supporting fires by infantry and artillery and facilitated by the operation of the engineers.

In addition to the foregoing comprehensive program, all the officers of the division assembled each Monday

Bridge built by Battalion A, 17th Engineers



SECOND ARMORED DIVISION REVIEW

1—Reviewing Party. Left to right: Brigadier General Alvin C. Gillem, Jr., Brigadier General Henry W. Baird, Brigadier General George S. Patton, Jr. (C.G. 2d Armored Division), Brigadier General Courtney H. Hodges, Brigadier General Fred C. Wallace, and Brigadier General Oscar W. Griswold. 2—Motorcycles moving into position. 3—The ride around. 4—Motorcycles passing in review

Tank attack

evening from August through December for lectures by different officers on the organization, tactics and logistics of the Armored Division; including a brief discussion of the German operation in Poland and a comparative study of a German Panzer Division and our own Armored Division.

These meetings not only permitted rapid orientation and instructions of all officers, but also allowed the Division Commander to personally talk to the officers and emphasize points of current interest. In these talks emphasis was placed on the care of the men and the material, on the prevention of social diseases, on military courtesy, and on smartness of dress, etc. Beginning in January all unit commanders and their staffs have met each Monday for a conference problem covering the consecutive operations and orders of all elements of the Division in a rear attack against the perfidious Reds from Florida, who have had the temerity to attack Alabama through the neutral state of Georgia. At this writing, it seems certain that, owing to the heroic efforts of the 2d Armored Division, the Reds are about to go down in bloody and ignominious defeat.

In closing, the Division feels justifiably proud in calling attention to the admirable record disclosed in the following statistics as of the month of February. (See Table II.)

Not only has the Division been bountifully supplied with men and officers but also in both number and quality the material being made available to it is most ample and satisfactory. Indeed, it is safe to say that no unit in the world possesses better equipment of every type.

It is the ambition of the Division to be worthy of the traditions of the American soldier and of the equipment with which it has been provided. Finally, the Division would be niggard in appreciation if it failed to take this opportunity of thanking the editor of The CAVALRY JOURNAL for the opportunity he has given it to describe its activities in the pages of his august publication.

TABLE I

DATE	TYPE OF EXERCISE	UNITS AND REMARKS
July 15, 1940		Division organized. Cadres began arriving.
August 27, 1940	Field Exercise	Entire Division. March into assembly positions for attack.
September 18, 1940	Dismounted Review	Entire Division.
October 4, 1940	Combat Exercise	All Combat Elements in attack. This has been repeated 6 times as a demonstration.
October 7, 1940	Command Post Exercise	All units. March, bivouac, reconnaissance and security.
October 10 and 11	Field Exercise	Entire Division. Same problem as C P X.
November 7, 1940	Field Exercise	All combat units. Two-sided combat problem.
November 14, 1940	Field Exercise	All combat units. Two-sided combat and river crossing.
December 6, 1940	Command Post Exercise	In conjunction with 4th Division.
December 12 to 17	Field Exercise	Entire Division March to Panama City, Florida and return with intermediate bivouac. March in two columns. One night march, participated in by 392 officers, 6,079 men, 1,126 vehicles including 241 tanks.
January 17, 1941	Field Exercise	All ground Reconniassance units.
January 20, 1941	Field Exercise	Armored Regiment vs. Infantry, Field Artillery and Engineers.
January 25, 1941	Field Exercise	All Field Artillery and Aviation.
February 3, 1941	Field Exercise	Armored Regiment vs. Infantry, Field Artillery and Engineers.
February 14, 1941	Mounted Review	Entire Division. Approximately 2,000 vehicles and 10,000 men and officers.
February 25, 1941	Field Exercise	Division Headquarters, Headquarters Company, Signal Company and Reconnaissance Battalion.
March 4, 1941	Field Exercise	All Field Artillery, Engineer Battalion and Observation Squadron.

NOTES

1. Combat aviation has participated in all division and most regimental and brigade exercises.
2. In addition to above, Division has carried out two Air Ground coordination exercises for GHQ.
3. Above list does not include brigade and smaller unit demonstrations for Infantry School which are given regularly.
4. Above does not include regular division and brigade communication exercises.

TABLE II

STATISTICS ON 2D ARMORED DIVISION

(Percentage of Command Average over period from July, 1940 to March, 1941)

Total number of men	10,835
Total Courts-Martial	1.9%
General Courts	.22%
Special Courts	.36%
Summary Courts	1.55%
A W O L	1.54%
Desertions	.277%
Admissions to Hospital	5.87%
Venereal Rate	.24%

The Motorcycle in March Control

By Lieutenant Colonel Charles R. Johnson, Jr., 106th Cavalry

THE remarks in this article apply primarily to a horse-mechanized regiment moving by road in a non-tactical situation. I believe the principles and procedure set forth to be equally applicable to a fully mechanized regiment. These principles are highly satisfactory in the 106th Cavalry (H-Mecz). Following these principles the mechanized squadron of the 106th Cavalry recently made an eight hundred mile march from home stations in Illinois to Camp Livingston, Louisiana, without having a single incident of interference with civilian traffic and coming through completely free of accidents. There were even no near-accidents. Experience in the 106th Cavalry and, previously, in the 7th Cavalry Brigade Mechanized have indicated to me that the prevention of accidents, while it depends on careful driving to a great extent, varies directly with the efficient use made of motorcycles, particularly solos. This experience also ties very closely together the duties of traffic control and route marking.

The first mooted question regarding the use of motorcycles is as to whether motorcycle control should be by regiment, squadron, or troop. I believe that more efficient control results from the procedure of grouping the motorcycles by regiment. Certainly this practice is easier on the vehicles, from a maintenance standpoint. The present type of motorcycle heats up rapidly in making slow runs and frequent stops and starts. From the maintenance standpoint the motorcycle's stops should be long and runs relatively long, and at speeds over thirty-five miles an hour. This prevents overheating, and overheating is at the root of most motorcycle breakdowns. A motorcycle engine cannot be cooled at slow speeds. Where control is by regiment, a motorcyle, falling out at a critical point, has approximately forty-five minutes in which to cool off while a horse-mechanized regiment passes it. In regaining its place at the head of the column the cycle runs at relatively high speed for nearly an hour. The number of times that it falls out throughout the day is greatly reduced. The other extreme, control by troop forces each motorcyclist to fall out at least ten times as often and to remain halted and cooling only one tenth as long as it would were control to be by regiment. Where eight separate control groups pick what appears to them to be critical points I believe that the critical points will not be so well chosen as they would be if one officer selected them for the entire regiment.

Procedure in the 106th Cavalry is as follows:

First: March the entire motorcycle troop ahead of the Regimental Command group, grouping within the motorcycle troop all solos at its head. All these solos are used before any sidecars function for traffic control. The sidecar cannot run up the column as fast or as safely as the solo, and it should be used as a last resort.

Second: Strip all other troops of their solos except for one solo to trail each squadron, troop, and platoon command car, attaching all other solos to the motorcycle troop for traffic control purposes. This procedure leaves the other troops sufficiently well provided with motorcycles for stick-message service.

Third: Designate the commanding officer of the motorcycle troop to select critical points. Have him indicate to his leading solo riders, by pointing, the exact locations where he desires traffic guards to fall out. These traffic guards are to remain in place until the rear vehicle of the Regiment, exclusive of Regimental Maintenance and cripples, has passed. These solo riders then move forward to rejoin the motorcycle troop. They are instructed to use every means at their disposal, as they go forward, to assist civilian traffic in passing the column. They are further instructed, on call, to take stick-messages in any event that the stick-messengers trailing the command cars are out of commission. It will be noted that as they go forward these men make no attempt to relieve traffic guards along the line of march. This prevents the possibility of a traffic guard's relieving himself when he sees another motorcyclist approaching, thereby leaving a point uncovered. A cyclist going forward, however, will occupy any critical point that he sees is not covered. As an example, certain points become critical after they have already been passed by the head of the control group. This might occur where a civilian truck has stalled along the road, creating a bottleneck that did not exist when the head of the column passed that point. Such temporary bottlenecks are abandoned after they cease to be bottlenecks. All traffic guards are instructed to point out emphatically the route of the column wherever a change of direction takes place. These gestures must be plain and unmistakable and held until acknowledged by the approaching vehicle.

Fourth: Where a bottleneck is caused by the routine halt of the column, or by the temporary halting of any one vehicle, the cyclists make no attempt to protect this

bottleneck, but continue on their way to the front. It is the duty of the crew of a stalled vehicle, creating a bottleneck, to post two dismounted guards with flags. Similarly, the column, on halting, always posts dismounted guards at the head and tail of each troop.

Fifth: This Regiment has seen no occasion to require the use of radio with the control groups. If such need should arise, there is the organic radio of the motorcycle troop.

Sixth: The following critical points are covered by cyclists unless positively controlled by civilian police:

Stop lights	2 cyclists
Stop signs	2 cyclists
Cross roads	2 cyclists
Roadforks	2 cyclists
Side roads	1 cyclist
Railroads	1 cyclist
Narrow bridges	1 cyclist
Changes of route	1 cyclist
Defiles caused by parked cars	1 cyclist

Cyclists at the above points must be alert to pass civilian traffic through whenever gaps in the column make it safe to do so. They must never halt civilian traffic unnecessarily, and must be extremely courteous in performing their duties. They should carry red flags.

* * *

In the 106th Cavalry, the control group is not used to contact police authorities. It has been found that this Regiment, using each village ordinarily marked on the highway map as a check point, can march on a predetermined schedule, hitting these various villages within two minutes one way or the other of the scheduled time. These schedules are hectographed and furnished each car commander. They give not only the time the head of the Regiment passes each village, but the time that the head of each troop passes. Copies of these schedules are invariably sent to the chief of police of each locality on the map, with a request that he put a man at each stop sign or stop light along the road or permit our motorcyclists to perform that duty. He is further requested, in case he has preference as to our route through his town, to have a guide meet us. In the march from Illinois to Camp Livingston we found that the police invariably acceded to this request and all seemed very much flattered at our having asked them to do this. An advance agent also precedes the Regiment by one day, reporting by telephone at night any unforeseen detours.

I have heard of a system whereby a unit guarded itself but did not await the arrival of the leading cyclist from the following unit. This system delegates the selection of critical points to the individual cyclist, which is bad. It also fails to mark the route. It creates a lack of continuity in the control and I believe that it would tend to make safety a haphazard matter.

Regimental Maintenance and cripples usually run without protection, and therefore must stop at all lights and stop signs. It is possible, of course, to assign three or four cycles to this group, if desired, but inasmuch as maintenance may be well in rear of the tail of the regiment, the route for it cannot be marked. One cycle should, however, be sent back from the bivouac to lead it in.

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The strength of an army, like the momentum in mechanics, is estimated by the weight multiplied by the velocity. A rapid march exerts a beneficial moral influence on the army and increases its means of victory.—NAPOLEON.

Ferrying Operations

By Major Albert Whipple Morse, Jr., Cavalry

FERRYING operations in the crossing of a river under adverse conditions were shown clearly in a demonstration and practical exercise held on March 6, 1941, for the 3d Basic Horse and Mechanized Class and Noncommissioned Officers Class at The Cavalry School, under the supervision of Lieutenant Colonel William B. Bradford, Cavalry, Chief of the Department of Tactics, and under the direction of Major Thomas T. Thornburgh, Cavalry, of that department, with the assistance of Captain Norris McL. L'Abbe. In charge of the engineer phase was Lieutenant Robert I. Dice, 9th Engineers.

Operations were conducted across the Smoky Hill River near the 6th Street Bridge in Junction City, and snow and ice added difficult features which might be encountered in actual practice.

Standard 10-ton ponton bridge equipment was used to construct the ferry in taking a scout car across the stream.

Due to the lack of a well defined current in the river at the point of crossing, neither the trail ferry in which the ferry itself acts as an inclined plane against the current of the river nor the flying ferry in which the ferry is swung from bank to bank, similar to the action of a pendulum, could be used. Consequently, an anchor cable was used to guide the ferry and to draw it from one bank to the other.

As shown in No. 1 of the accompanying photographs, the vehicle was loaded slowly under its own power. At the stream side of the ferry, a safety curb was employed to block movement of the scout car.

The most important feature of either loading or unloading of a vehicle on or from a ferry is anchoring the ferry to the shore to prevent the thrust of the vehicle, as it comes upon or leaves the ferry, from separating the ferry from the abutments.

In addition to the shore anchor cables of the ferry, added security and rigidity is provided during the loading and unloading operations by firmly leashing the gunwales of the abutment ponton and the near ponton

1—Loading vehicle at near bank. Note ponton boat replacing the trestle in abutment span; the heavy lines to the shore, and lashings between boats used to hold the ferry securely against the abutment span during loading operations. 2—Leaving near bank. Note the four oarsmen used to maintain proper alignment of ferry during crossing. 3—Ferry in midstream. Pontons parallel to current. Four men propel ferry hand-over-hand on line at side of vehicle. 4—Unloading the vehicle at the far bank. Way planks were used to bridge a small gap between the flooring of the ferry and the abutment. Lieutenant Dice is shown supervising the unloading.

of the ferry, as shown in No. 2 of the accompanying photographs.

A deviation from normal erection of a ponton bridge may be observed in photograph No. 1 of the point of embarkation, and in photograph No. 4 of the debarkation operation.

The trestle normally used with the abutment span at embarkation was replaced by a ponton boat, and at debarkation a single ponton boat replaced the hinge span usually employed at a ferrying terminal.

An aid to the ferry crew in handling the cable, as shown in photograph No. 4, was the loose stringing of the anchor cable along which the ferry was pulled.

No difficulty in the operation was provided by the tire chains on the vehicle or by the extremely slippery condition of the flooring of the ferry and abutments, caused by the snow. Despite adverse weather conditions materials were assembled and the crossing was effected promptly and without difficulty.

In all cases where the stream has any depth and width, wheeled transport must depend upon existing bridges or upon means of crossing improvised and provided by the engineers. This demonstration of ferrying provides an example.

Ponton equipment is not organically a part of the cavalry division engineer squadron and must be drawn from Corps or Army. A foot bridge can be placed in position quickly and effectively by the engineers. The cavalry division engineers carry approximately 450 feet of this bridge.

By using this foot bridge in triple width, animals as well as men can be passed over. Naturally, when this is done the total effective length is reduced to 150 feet.

When it can be avoided, troops and animals should cross rivers without swimming to avoid any injurious effects to their health, and it is desirable to avoid the floating of equipment across a river because of the difficulty in its subsequent use.

In river crossings conducted under the difficulties of the winter season, the efficiency of the command is reduced in extremely cold temperatures.

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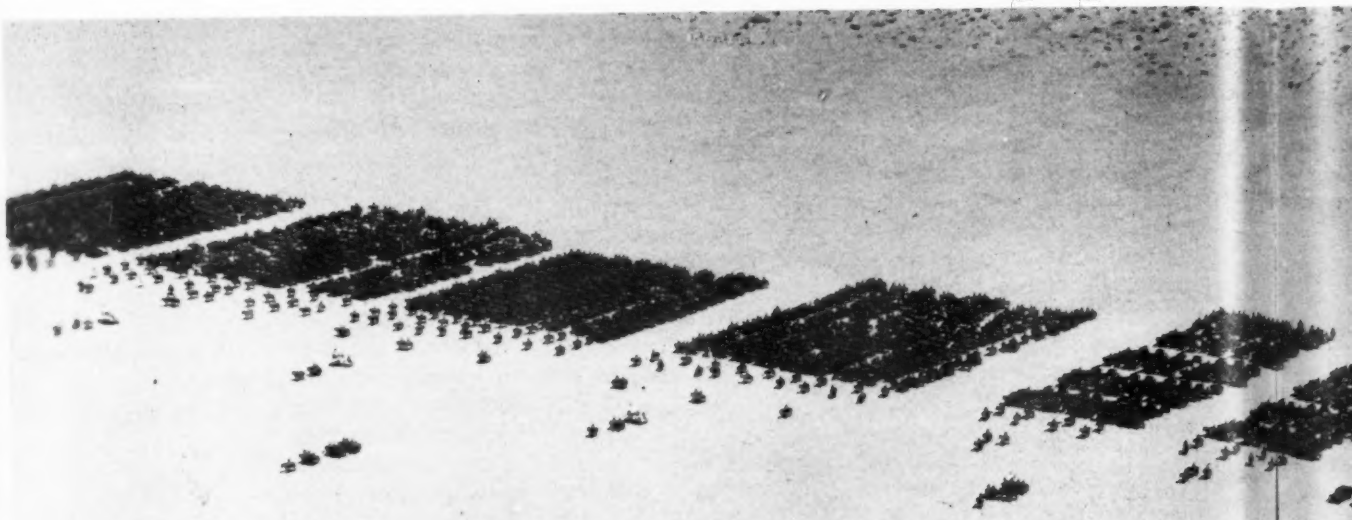
A well-established maxim of war is not to do anything which your enemy wishes—and for the single reason that he does so wish.

You should, therefore, avoid a field of battle which he has reconnoitered and studied. You should be still more careful to avoid one which he has fortified and where he has entrenched himself. A corollary of this principle is, never to attack in front of a position which admits of being turned.

—Military Maxims of Napoleon.

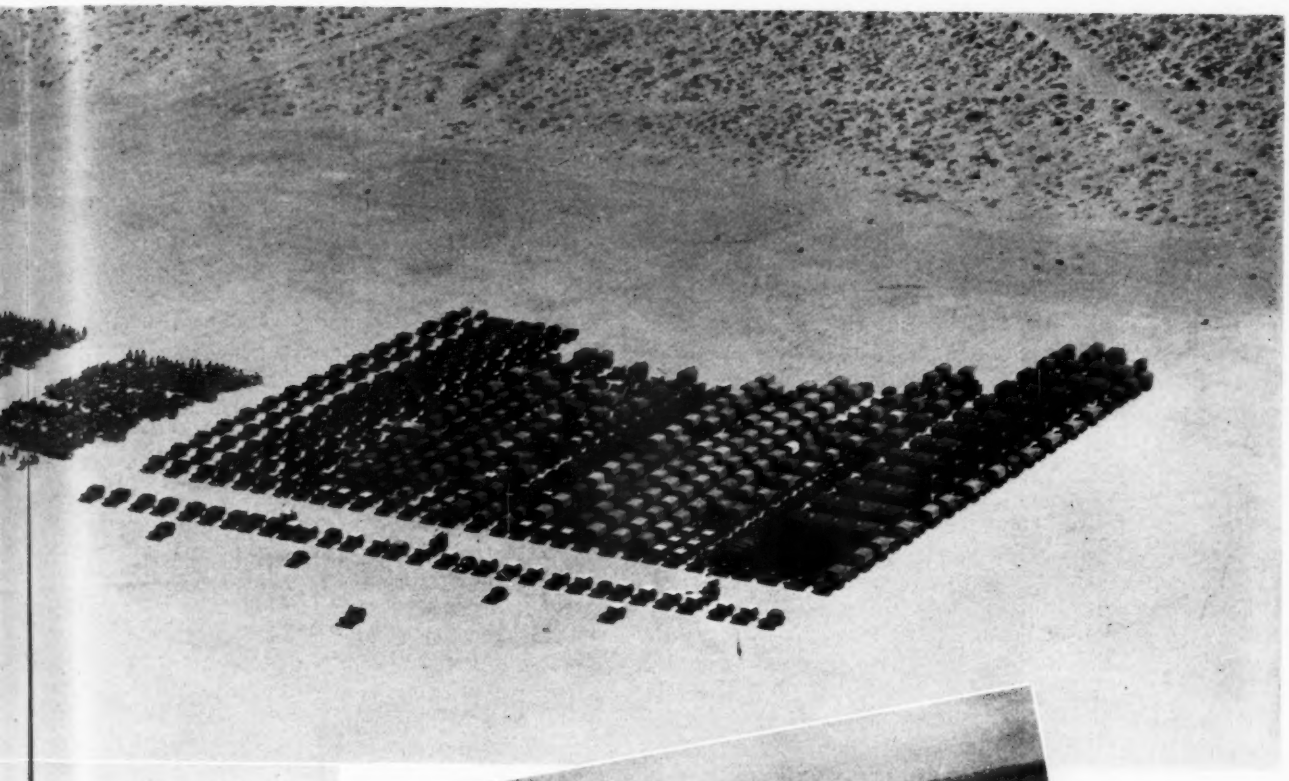
THE 1st CAVALRY DIVISIO

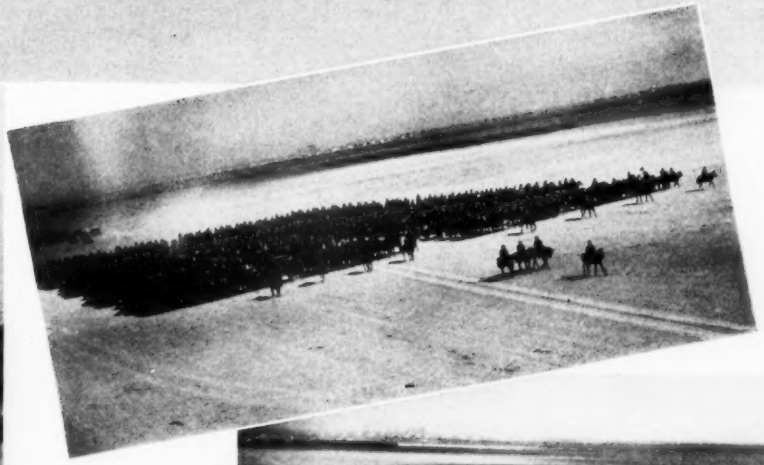
Celebrating its assembly at For



SION PASSES IN REVIEW

Fort Bliss, Texas, in February





Signal Communications in the First Cavalry Division

By Lieutenant Colonel Norman L. Baldwin, Signal Corps

STONEWALL JACKSON WASHINGTON aged six and the color of weather beaten charcoal had been whisked up, whirled through the air along with the sideboards and scantling which had been his family home and been dropped in a thicket a half-mile away by a passing tornado. At Sunday school two days later he was much astonished to hear from his Sunday school teacher that "the Lord was with him all the time," and his only reply was, "Eff'en he wuz, he sho' wuz goin' some!"

The same might well be said of the job of furnishing dependable communications to the 1st Cavalry Division in the field. "Blitzkrieg" tactics have for years been the normal function of this highly mobile branch of the service and the only change has been that modern equipment has made the "blitz" faster, the "krieg" heavier and the intercommunication speedier and more dependable.

Radio and messenger communication channels have in the past carried the main traffic load in the Cavalry Division but during the last two years wire communication has become increasingly important and effective for three very definite reasons:

(1) Increased mobility and wider range of action have been provided by the many scout cars in the division and each scout car is provided with a comparatively powerful radio set. New organizational units have been set up for the division adding considerably to the fire power and each unit has been provided with radio communication. The net result (both literal and figurative) has been to complicate the difficulties normally encountered in radio operation within the division. Available frequency channels for the many activities of command, reconnaissance, spotting fire of the different units, etc., have become so congested that only a high degree of technical ability and radio net discipline will prevent a disastrous interference situation if too much traffic is handled by radio.

(2) All such divisional radio communication traffic is subject to interception by the enemy.

(3) With the advent of modern wire laying equipment mounted in sturdy, dependable 1½-ton 4 x 4 trucks, the use of telephone circuits and simplexed telegraph circuits to brigade and other subordinate headquarters (if acting as Division Reserve or on certain special missions) has relieved the division radio net of a tremendous volume of traffic.

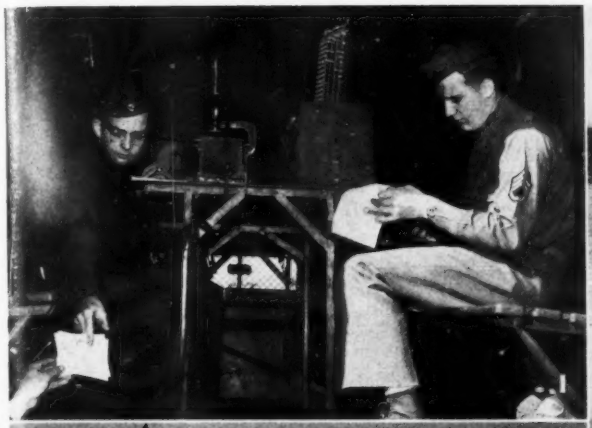
A wire team whose mission is to maintain wire communication between Division Headquarters and a Brigade Headquarters is beset with many difficulties. At times a Cavalry Brigade Headquarters is one of the fastest moving tactical headquarters imaginable and the wire crew must be "on the ball" every minute, especially if the brigade is the maneuvering force in an envelopment.

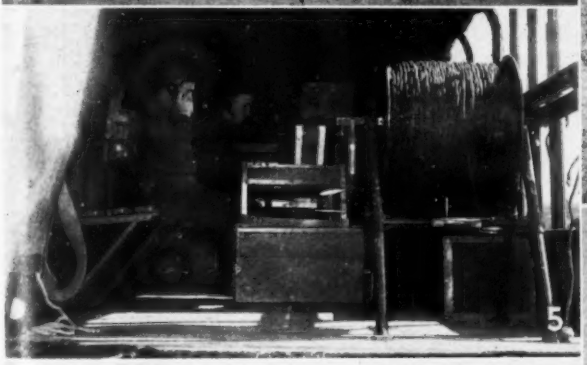
The Signal Troop

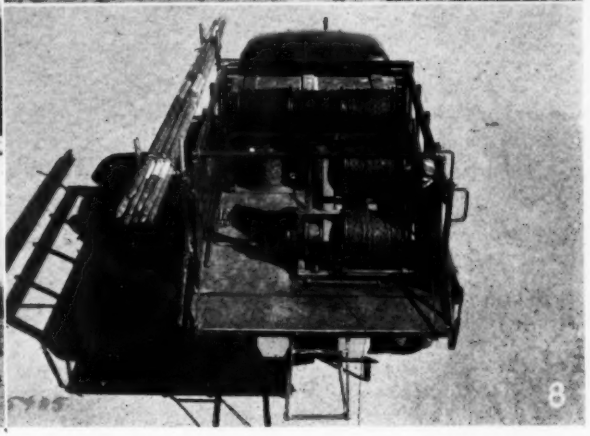
It might be well to explain the detailed breakdown of the wire personnel of the Signal Troop. The Wire Platoon is divided into two sections: The Operation Section and the Construction Section. Since the duties of the Operation Section are primarily to operate the wire system which the Construction Section installs, we will consider the operation of the latter section only. Although under the general supervision of the Wire Chief, the Construction Section is directly controlled by the Construction Chief, normally a Staff Sergeant. The section itself is divided into four wire crews each led by a sergeant "crew chief." The basic wire construction unit then comprises the crew chief and seven privates with their associated equipment. The crew chief with four privates (one of whom is the driver), lays all circuits using a 1½-ton 4 x 4 truck, equipped with the gasoline-driven wire-layer RL 26A and the other three men on a half-ton 4 x 4 pick-up truck "secure" the circuit and shoot trouble. The basic idea is that the 1½-ton truck crew gets the wire on the ground and the half-ton or "tender" crew follows along and makes all changes or repairs necessary to keep the circuit in operation.

Of the four wire crews, one is normally at the Rear Echelon of Division Headquarters, while the other three are with the Forward Echelon. Two of the three crews at the Forward Echelon are attached to brigades (one to each), and the third crew is held at the Division Command Post as an emergency crew, a relief crew and general trouble shooting crew which may be called upon to augment the initial wire installation.

Upon the success or failure of the system of communications employed, usually lies the success or failure of all military operations.







1– Interior of Message Center truck. Note time stamp and peg board above files. Peg board shows at a glance the status of the various communications agencies ("In" or "Out") radio, telegraph, telephone, etc., to the various other units. 2– Delivering radio messages on the move. 3—Simple overhead lance pole construction. The circuit itself is used as two of the four guy wires. 4—Switchboard truck. Note frame uprights which allow adequate clearance for overhead construction, the terminal strips are permanently cabled to the switch board. 5—Interior of Switchboard Truck showing BD 14 40-line switchboard and EE 65 Wire Chiefs test set. On floor in center foreground is 12-line BD 72 switchboard which is used outside the truck as a switching central. 6—Command Radio Car used by the First Signal Troop. These cars are equipped with 12-volt systems 180 ampere battery and heavy duty generators and are completely bonded and shielded. 7—Wire crew in action: Cavalry Pack Radio Set SCR 203 in background. 8—1½ Ton (4 x 4) Wire Layer.

We can visualize then, for example the wire crew attached to the 2d Brigade starting its initial installation. At the Division Command Post the crew chief gets his initial order to install a circuit from the Division Command Post to the 2d Brigade Command Post which will be in the vicinity of such and such coördinates. In addition, if the Command Post is to remain fixed for more than a few minutes, the wire circuit is to be simplexed for telegraph operation. (If the 2d Brigade Liaison Officer is present he checks the approximate location of his Brigade Command Post.)

The crew chief checks his map, his wire, and his crew and starts out. He checks each reel of wire for continuity as he lays it but concentrates on making a speedy installation, leaving it to his tender crew to "secure" the circuit: i.e., protect the circuit from mounted and motorized elements, get the circuit off the road, check and dress ties and splices, check clearances on overhead crossings, and otherwise insure that the circuit will remain in constant operation.

When the wire crew arrives at the Brigade Command Post, an EE8 telephone is placed at the terminus of the circuit, normally at the Command Post scout car and the circuit simplexed for telegraph operation. The crew chief reports back to Division immediately that the wire is in and working, and he is awaiting orders. Normal instructions in this division require that this crew remain at the Brigade Headquarters where it may advance the wire axis, retreat, or tie in on some commercial circuit. In other words the crew chief is then on his own to maintain wire communication from Brigade to Division Headquarters. In some cases an officer is sent with the wire crew to Brigade, in which case he automatically becomes "crew chief," or the Signal Troop "advance agent."

If there are any who doubt that wire communication can be satisfactorily maintained between a Cavalry Division Headquarters and Brigades, let it be mentioned here that during the Third Army Maneuvers in East Texas and Louisiana in 1940, during which the 1st Cavalry Division acted as an integral part of the VIII Corps, practically constant wire communication was maintained between Division and Brigades. Where the scout car can go, the 1½-ton 4 x 4 wire layer can go and does go, and there is no substitute for the person-to-person conversations between the Division Commander and the Brigade Commanders.

The simplexing of wire circuits between Division and Brigade Headquarters gives an additional channel of communication which, in the case of many types of tactical (and administrative) messages, is much more satisfactory than either radio or telephone. It is not necessary to encode messages to be sent over the simplexed TG 5-A telegraph circuit, and any radio operator can operate it, so the speed, accuracy and security of messages sent by telegraph are self-evident. Another advantage of simplex telegraph operation is that instead of having two separate telegraph sets, each simplexed on a brigade circuit, the Division telegraph set may be used as a "way station." With this type set-up, the telegraph set at Division is bridged across the switch board, still leaving a talking circuit to each brigade, and a message sent from any one of the three stations reaches both of the other stations. This means that information, requests for information, position reports, and orders which are sent between any two stations are transmitted automatically to the third station. The disadvantages of using a "way station" are that it cuts down on the volume of traffic which may be handled by simplex, and, in certain types of terrain where the resistance of the ground is great, a relatively high resistance to ground at either end station will render the whole telegraph system inoperative. In this division, ground stakes are driven at all three points as soon as the wire circuits are in so that division may operate the circuits to brigades (and to Divisional Artillery) either as individual direct circuits or as a three station loop depending upon the requirements of the situation and the technical difficulties mentioned.

To round out the picture there are 48, SCR 194, "Walkie Talkie" radio sets authorized in the three battalions constituting the 1st Cavalry Division Artillery. Characteristics and functioning of these sets are well known and need no description in this article. Twenty of these sets have been in the hands of the former two battalion artillery regiment which has just lately been superseded by the three battalion divisional artillery organization. The addition of an Antitank troop for the division and a Weapons Troop for each of the brigades adds fifteen more SCR 245 radio sets to bring the total of radio sets of the division to 211.

Technical requirements and operational records in the matter of unit message center operation have been streamlined to the maximum consistent with efficient operation. Air-ground communication by panels, "pick-up" messages and radio are orthodox but mounted and motorcycle messengers are taught the elements of battle reconnaissance in order to augment their effectiveness and efficiency as communication and intelligence personnel.

With an organization such as the 1st Cavalry Division, fundamentally capable of greatly increased fire power coupled with the ability to feint, weave, dodge and strike, the proper solution to the problem of establishing and maintaining efficient coördination of all the means of communication now available between the various elements has become more than ever of paramount importance.

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MEDICAL SERVICE
In First Cavalry Division

By Lieutenant Colonel Charles W. Riley, M.C.
and
Lieutenant Colonel Adam G. Heilman, M.C.

THE Medical Service of the Division is divided primarily into two groups. The first group consists of the Medical Detachments of the regiments and smaller units. The second group is composed of the 1st Medical Squadron. These two groups form the Hospitalization-Evacuation system within the division, from the front line to the divisional rear boundary.

Regimental Detachments

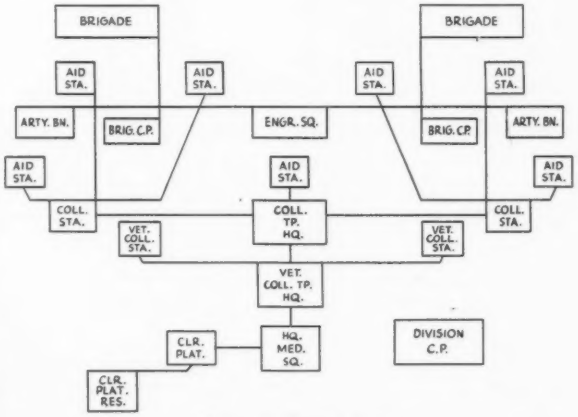
All regiments of the division and many of the smaller units are provided with medical detachments. These detachments furnish medical, dental, and veterinary service to their organizations on the march, in camp, and in combat. When troops go into action the detachments accompany them, furnishing first aid and establishing aid stations for men and animals. Cavalry moves rapidly and covers wide areas, so that the problem of keeping in contact with the troops at all times is a very difficult one. In order to best accomplish this, most of the men of the detachments are mounted.

The Medical Squadron

The Medical Squadron is a divisional unit and is responsible for the evacuation of wounded men and animals from the Aid Stations to the Clearing Station and for their care and treatment during this period. From the Clearing Station to the rear, the transportation and care of the sick and wounded is a responsibility of the Corps or Army. The collection and evacuation of men and animals in a cavalry division offers, it is believed, some peculiar and difficult problems. Cavalry moves rapidly for fairly long distances over diversified terrain and under all weather conditions. On reconnaissance, wide enveloping movements, and in combat the troops may scatter over wide areas. Horse cavalry is not "grounded" due to poor roads, unfavorable terrain, such as streams and woods, or adverse weather conditions. In fact, under such adverse conditions of terrain and weather, the horse shows its greatest value. The Medical Squadron is motorized except for a part of the Veterinary Troop, so that the difficulties in carrying out its mission effectively (i.e. the maintenance of communications and contact and the collection and evacuation of patients) can readily be visualized. Units of the Squadron must be organized and trained so that they are able to move quickly at all times and under any conditions developed by the tactical situation.

Squadron aid station.

The Medical Squadron consists of the Headquarters and Headquarters detachment, the Collecting Troop, the Clearing Troop, and the Veterinary Troop.



Communications

The Medical Squadron is not authorized radio or telephone equipment. It must therefore depend on more primitive methods of communication. One of the greatest problems that it has to overcome is the maintenance of contact between the aid stations and the most advanced echelon of the squadron, the collecting station. It is vital to maintain this contact at all times, as

the knowledge of the movements and location of the aid stations is an absolute necessity in planning and carrying out their evacuation. Several methods of keeping contact are employed. Distances are usually too great for dismounted contact agents to be of value and the Collecting Troop has no horses. However, the Veterinary Collecting Stations are usually established in the same area as the collecting stations for men, and mounted contact agents sent forward with the regiments by the Veterinary Troop can also bring back information for the collection station. Contact agents are normally sent forward with the regiments on motorcycles, and this is practicable except in very rough country, where streams are to be crossed and heavy woods transversed. Every advantage is, of course, taken of the divisional communications network, in relaying messages between aid stations and the collecting station, or between the collecting stations and the squadron headquarters or other elements to the rear. In order to follow the movements of the troops more easily and facilitate the keeping up of contact between the various echelons of the medical chain, it is very important that commanding officers of the various medical units be thoroughly conversant with the tactical plans. Continuous contact between the division command post and the squadron headquarters is maintained through a medical liaison officer, kept at the division command post during combat conditions.

Squadron Headquarters and Headquarters Detachment

This unit carries on the administrative and supply functions for the squadron and coördinates all matters pertaining to it. The Supply Officer has very important functions to perform, as he is not only the unit supply officer, but the medical supply officer for the whole Cavalry Division. As such, he obtains medical supplies from the Corps or Army and distributes them to the units as they are needed. During combat conditions the Squadron Headquarters is often established in the vicinity of the clearing station, as this has been found to be a convenient place from which to coördinate the work. Telephone communications with the division forward and rear echelons are usually available here. All plans for medical service of the division, and movements and location of various elements are coördinated and approved by the Division G-4 before being issued.

Evacuating collecting station.

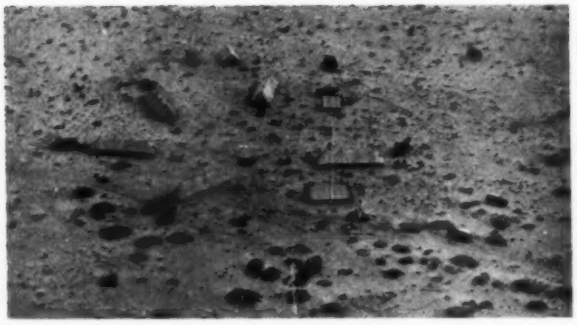
During combat such approval is usually oral in character and is transmitted to subordinates in brief messages or orally.

An efficient system includes temporary treatment on the battlefield and the transport of serious cases to the rear.

Collecting Troop

This troop is organized into a troop headquarters and two collecting platoons. Each of these platoons is further sub-divided into a station section, a bearer section, and an ambulance section. With this organization the troop may readily function with a platoon attached to each of the cavalry brigades. In combat the Collecting Troop follows the troops into action. In this division it has been found practicable and convenient to attach a platoon to each brigade, these being under the control of brigade commanders during advances and until contact with the enemy is made. At this time they revert to the direct control of the squadron commander as approved by the division G-4. The plan outlined above leads to some loss of control of these elements by the squadron commander, during marches and advances in the face of the enemy, but has some decided advantages as learned by experience during the past year. While advancing into combat, contact agents are sent forward to keep in touch with the regimental detachments and so are able to inform the Commanding Officer of the Collecting Troop of the progress of events and especially of the location of aid stations, when established, and the number of wounded to be expected. As indicated by the situation, collecting stations are established, usually one in the rear of each brigade. Theoretically the sites are chosen beforehand and approved by G-4, but this procedure has not been found practicable in this division, and usually the time and place of location is left to the unit commander. As soon as the stations are established, immediate notice is sent to the squadron commander giving hour of opening and location. Subsequent sites in advances or withdrawals may be chosen by the squadron commander or left to the unit commander. The collecting stations are as far forward as circumstances permit, up to within 1,000-1,200 yards of the front lines. Litter bearers are sent forward to the aid stations and patients brought back to the collecting station. Any horses of wounded men which are available are used for transporting patients. It may be possible at times to run an ambulance forward of the collecting station, perhaps even as far as an aid station, but probably very seldom, except at night. At the collecting station such emergency treatment is given as is necessary to keep the patient in the best possible condition for further evacuation. Evacuation is accomplished as

1—Squadron headquarters. 2—Casualties arriving. 3—Treating casualties. 4—Operating. 5—Surgical shock. 6—Dental. 7—Litter section. 8—Kitchen.



Air view of clearing station.

rapidly as possible and the sorting begun at the aid station is continued. From the collecting station patients are evacuated by ambulance to the clearing station. With two stations or collecting points operating the Commanding Officer of the Collecting Troop has to coordinate the work, assigning the ambulances to one or the other platoon as the circumstances demand. On marches ambulances and personnel of the Collecting Troop are used to establish March Collecting Points, where patients are collected and subsequently evacuated.

Clearing Troop

This troop, formerly called the Hospital Troop, is organized into a troop headquarters and two clearing platoons. Each platoon is so organized that it can function separately, being able to maintain itself and to operate a hospital of 100 beds. In practice only one platoon or one half of the station is usually established at a time. The other half is held packed up in a position of readiness. Thus it can be moved forward in an advance or to the rear in a withdrawal, without disturbing the functioning half. When a new station has been established, the other packs up and follows. Continuous service is given by this method. In selecting the site for a clearing station the same factors must be kept in mind as for other units. Good roads are even more important, and protection from air observation more difficult to obtain. The usual distance behind the front is 4-7 miles. The clearing station is better equipped to treat casualties than any unit discussed previously. However, even here, during combat conditions, the treatment given is strictly of an emergency type. Wounded coming in are carefully inspected and records (The Emergency Medical Tag) checked. Dressings are renewed if necessary, splints readjusted, shock treated, tetanus antitoxin administered and any drugs or other treatment given to make the patient more comfortable and to keep him evacuable. A certain number of patients will be received who are classified as non-transportables. These must be held temporarily and will be discussed later, but all others should be evacuated as rapidly as possible. The first principle of the divisional medical service is that all units should be mobile at all times and be able to follow the division wherever it goes. They must not be immobilized by casualties. Sorting, which has been mentioned in connection with

1—Treating animals, collecting station. 2—Loading animal casualties. 3—Veterinary collecting station.

forward echelons, becomes very important here. The strength of the division must be conserved by every means. Many slightly wounded, malingerers, and slightly sick and gassed will come to the clearing station and every effort is made to separate them from those requiring further evacuation. The clearing station is evacuated by ambulances from the Army or from the Corps if an independent Corps is functioning. During rest periods and in bivouac areas the clearing station operates as a camp hospital and sick and injured of a mild type are treated for several days at a time, thus keeping them within the division.

Veterinary Troop

This troop is organized into a troop headquarters, two collecting platoons and a clearing platoon. The functions and location of stations of this troop are similar to those described for the collecting troop. In fact, these two troops function together, although under separate commands. The Collecting Station and the Veterinary Collecting Stations are usually established in close proximity.

In the matter of contact and communications they assist each other. Animals are collected in the regiments, brought to the aid stations, and from there evacuated to the collecting stations by personnel of the Veterinary Troop. Lead lines or trailer ambulances are used. Here sorting and treatment take place and animals are prepared for further evacuation. The more seriously injured are destroyed wherever they are found. The Veterinary Troop differs in one respect from the Collecting Troop, in that the clearing platoon furnishes temporary hospitalization for animals. It therefore combines the 2nd and 3rd echelons of the evacuation system.

Division Surgeon's Office

This is not an integral part of the Medical Squadron, but since the Division Surgeon is also the Commanding Officer of the Squadron there is a very close connection and coördination between the two. This office is normally a part of the division rear echelon and is often established there during combat. It has been found convenient and satisfactory in many instances, however, to establish it in the vicinity of the clearing station.

In his capacity as Commanding Officer of the Medical Squadron it is necessary for the Division Surgeon during combat to be in very close touch with the tactical situation and he should visit all forward units of the evacuation chain frequently. At other times it has been found that it is possible to keep in closer touch with the progress of events at the division forward echelon than at any other place. Here close contact with the division G-4 can be maintained. At all times during combat, a medical officer is kept at the forward echelon. The Division Veterinarian has the same responsibilities in the care and treatment of animals as the Division Surgeon has for men. He spends much time in personally inspecting the animal evacuation system, and the care of animals during marches and in bivouac.

Reinforcing Service

During combat, casualties may become so heavy that the division evacuation service is unable to handle them. Under such circumstances the Division Surgeon calls on the Army Surgeon, or the Corps Surgeon in a separate Corps, for assistance. He may ask for additional ambulances, litter bearers or even hospital facilities. Such reinforcing troops are taken from an Army Medical Regiment and dispatched to the place where they are needed. When such assistance is called for the request should normally go through the Division G-4 and the Army G-4. In serious emergencies, or when communications are not working, it is desirable to get such requests through by the most direct route or method.

Non-transportable wounded: head injuries, sucking chest wounds, severe abdominal wounds or any wounded showing marked shock are always a problem. They cannot be kept in the clearing station as this must be kept mobile at all times. The procedure outlined above will therefore be followed. Hospital facilities from an Army Medical Regiment may be sent or under certain conditions a Surgical Hospital may be used. This latter is a rather elaborately equipped organization and capable of giving any kind of definite treatment.

Conclusion

The 1st Medical Squadron has been in existence since 1925, but until recently only in a fragmentary form. In its present form it has been organized for less than a year and is still lacking some personnel and transportation. Nevertheless, during the past year it has been possible to test it on three maneuvers of a month or more under simulated combat conditions, and on innumerable shorter exercises. In its present form, it is believed that it is well organized and equipped to carry on the medical service of a cavalry division. It is realized that this is the only unit of its kind functioning with the field forces and that at the present time changes are taking place very rapidly. There is no basis for comparison. However, it is believed that this is a well balanced and workable unit, capable of carrying on under average conditions.

In the words of its motto the 1st Medical Squadron is "STANDING BY."

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Viewpoint of the Division Quartermaster

By Lieutenant Colonel C. C. Strawn (Cavalry), 2.M.C.

RECENT press dispatches state that Britain's historic offensive in Northern Africa hinged on the question of a few days' supplies. The British forces which opened the drive with an attack on Sidi Barrani were issued five days' supplies. Had the Italians held out a day or two longer than they did, the British might have been compelled to withdraw to their Marsah Matruh defense line. How often during the course of military history has this been true—that the success or failure of a military venture has depended upon a few days' supplies. And how often on maneuvers have we seen the supply phases of the situation either disregarded completely or touched upon lightly. Now that we are faced with an emergency, where the old axiom of the map problem room, "Class I supply—automatic," may not hold true, it behooves all of us to become supply minded, at least to the extent that we are familiar with the possibilities and limitations of the supply and evacuation facilities of our own Cavalry Division.

It has been said that the principles of supply and evacuation in the Cavalry Division are the same as in the Infantry Division. This may be true, but due to the difference in the types of transportation employed, the great mobility of Cavalry, the problem of forage supply, and the ever increasing problem of gasoline supply, the application of these principles must of necessity differ.

First I wish to point to the complete reorganization, modernization, and streamlining of the horse cavalry division. It now consists of two powerful combat teams, *i.e.*, two brigades, each with its supporting battalion of 75-mm. howitzers (horse) which combined with the battalion of 105's (motorized), the Mechanized Reconnaissance Squadron, the motorized division Antitank Troop, and other auxiliary troops and services constitute a powerful striking force, endowed with great fire power and increased mobility.

Paralleling the modernization of the combat elements of the Division, the organization and equipment of the supply and evacuation services have proceeded with the idea of augmenting the mobility and increasing the flexibility of the combat elements by providing them with the munitions of war at the time, the place and in the quantity needed.

The supply and evacuation services of the cavalry division consist of an engineer squadron, a medical squadron, a quartermaster squadron, a signal troop, and an ordnance company.

General Data—The size of the quartermaster squadron, in the horse cavalry division, has been materially increased in order to keep pace with the increase in firepower, and the general expansion in man, animal and vehicular strength. Let me present you with a few general facts and figures which may give you some idea of the problem involved and the means we have for solving it. The vehicles of the Quartermaster Squadron have a total cargo capacity of 354 tons, exclusive of those hauling squadron administrative supplies, maintenance supplies and spare motor parts. The pack train can carry 20 tons, making a total of 374 tons of cargo, exclusive of gasoline. In addition the squadron has ten gasoline tank trucks, capacity 750 gallons each, and 400 ten gallon drums of gasoline carried on any available cargo transportation, making a total of 11,500 gallons of gasoline reserve. The prescribed loads including 1 day's reserve ration, 1 day's grain, small arms and artillery ammunition, and gasoline in drums equal 197 tons or a surplus capacity over prescribed loads of 177 tons. The daily Class I and Class III supplies for the division weigh over 116 tons. For one cavalry regiment the weight of these supplies is over 14 tons. I might mention here also that there are 1,313 gas consuming vehicles in the division with a total tank capacity of 26,375 gallons. The daily average consumption of gas in combat for the entire division should be approximately 10,000 gallons. Further, I might add that in the Quartermaster Squadron alone there are 170 gas consuming vehicles and 62 one-ton trailers. Closed up on the road almost bumper to bumper this squadron in column of vehicles is 1.2 miles long and proceeding along the highway in convoy formation with only 50 yards distance between vehicles it is 6 miles long. The new tables of organization provide sufficient transportation (96 trucks combination animal and cargo) to enable the squadron, under favorable conditions, to transport a reinforced horse squadron complete with men, animals, arms, equipment, food, grain and gasoline a sufficient distance to meet the requirements of any probable tactical situation where firepower has to be moved quickly from one portion of the battlefield to another, or where under cover of darkness it might be possible to move a unit some distance and arrive on the

flank or rear of an enemy in time to completely surprise him at dawn. Further, this procedure would provide for men and animals arriving at the jump-off in a comparatively fresh condition after moving considerable distances.

Cargo capacities and Prescribed Loads, Quartermaster Squadron, Cavalry Division (Horse)
T.O. -10-115, Nov. 1, 1940

CARGO CAPACITY:

2 Quartermaster troops (truck)		
(*a*) 48 trucks, 4 -ton (combination animal & cargo)	354	tons
48 trucks, 2½-ton (combination animal & cargo)		
42 trailers,1 -ton, cargo		
1 Quartermaster troop (pack)	20	tons
(*b*) 10 trucks, 2½-ton, gasoline tankers (7,500 gals.)		
Total (7,500 gals.)	374	tons

PRESCRIBED LOADS:

1 day's reserve ration	35	tons
1 day's grain ration	40	tons
Small arms ammunition	79.5	
Artillery ammunition	26.5	
Gasoline (7,500 gals.)		
(*c*) carried in 10-gal. containers (4,000 gals.)	16.0	
Total (11,500 gals.)	197	tons
SURPLUS CAPACITY OVER PRESCRIBED LOADS	177	tons

NOTE.—(*a*) Capable of transporting one reinforced squadron cavalry complete with men, animals, equipment, and one day Class I, III, and V.
(*b*) In addition to trucks for general cargo purposes.
(*c*) Carried on any available cargo transportation.

Cavalry Division (Horse)
Class I and III (1 day)

I.

(*a*)		
Rations @ 6 lbs. per man = 11676 X 6 =	35	tons
(*b*)		
Grain @ 10 lbs. per animal = 7994 X 10 =	40	tons
	75	tons

III.

(*c*)		
Gasoline, for vehicles 1313 X 7.3 gals. = 9,585 gals.	38.4	tons
(*d*)		
Gasoline, for kitchens 77 X 10 gals. = 770 gals.	3	tons
Total	41.4	
GRAND TOTAL	116.4	tons

NOTE.—(*a*) Total officers and men 11,676.
(*b*) Total animals 7,994.
(*c*) Total gas consuming vehicles = 1,313, average daily consumption per vehicle 7.3 gallons.
(*d*) Total messes = 77 @ 10 gallons per mess per day.

In order to provide transportation for such a move as this, however, the squadron would have to dump its service load of ammunition and Class I supplies. Further, it would be necessary to borrow sufficient transportation from the units of the division to provide for the regular delivery of the supplies of food, gasoline and ammunition. Therefore, in planning such a move a careful estimate of the entire supply situation must be made in order not to so deplete the amount of cargo transportation in the division as to cause a complete breakdown of supply.

With this general statement of facts we will now go into the more detailed operation of quartermaster activities in the Division.

QUARTERMASTER SERVICE IN CAVALRY DIVISION (HORSE)

The quartermaster service of the cavalry division (horse) performs the normal quartermaster service activities pertaining to any similar unit. In order to carry out these functions the Quartermaster Squadron, Cavalry Division (horse) has been organized. This organization will be discussed in more detail later.

The squadron headquarters consists of a lieutenant colonel, commanding, and five other officers, who form the nucleus for the staffs of both the squadron and division quartermaster. The lieutenant colonel commanding this squadron acts in the dual capacity as an organization commander and as a member of the division special staff. As the commander of the squadron he is charged with the duties and responsibilities of a commanding officer and therefore is responsible for the efficient operation of the Quartermaster Squadron. As a special staff officer he is advisor to the division commander and his general and special staff on Quartermaster Corps matters, including recommendations for Quartermaster activities and installations. He supervises all quartermaster activities throughout the division and is responsible for the efficient operation of the entire quartermaster service of the division, and all attached quartermaster units. All quartermaster activities and operations are under the direct supervision of the supply section of the general staff (G-4). The division quartermaster must work in close coöperation and harmony with the other members of the special staff and all sections of the general staff and commanders of all subordinate units. The division quartermaster's relations with the commanders of subordinate units are those of a special staff officer of a higher unit commander. He exercises none of his command functions in such dealings. As a special staff officer he has authority to call on unit supply officers for such technical reports as may be necessary in supervising the quartermaster activities in the division.

The division quartermaster must keep himself constantly informed as to the status of supply and transportation in the division and be prepared to advise G-4 and the division commander regarding same at any moment. He must keep fully informed of the tactical situation and make plans and preparations in advance so that no time is lost when he is called upon to submit recommendations as to quartermaster activities.

An operations map should be kept in the office of the division quartermaster and it should be kept posted to date showing the location of all units in the division and all possible information (a knowledge of which might facilitate the supply of the units of the division). All officers in the quartermaster squadron should be required to keep themselves posted regarding the tactical situation and the location of all units and installations. They should be required to consult the operations map frequently and keep thoroughly posted regarding the supply situation.

In order for the division quartermaster's office to keep constantly in touch with the tactical situation, and in order that G-4 can maintain liaison and be fully informed regarding the activities of the quartermaster squadron it has been found necessary for the division quartermaster or a representative to remain forward with G-4 during periods of active operations.

Division Quartermaster's Office

The division quartermaster's office should be divided into three divisions: administrative, supply and transportation. The senior major of the squadron acts as squadron executive, second in command, and assistant division quartermaster. He exercises general supervision over all activities of the quartermaster's office. In actual operations the quartermaster will frequently be toward the front in the forward echelon where he can contact and confer with G-4. During such periods the squadron executive is in active command of the squadron and must act for the division quartermaster in all matters pertaining to this activity.

The administrative division operates under the squadron adjutant, who combines the activity with his duties as a squadron staff officer. This division maintains an office of record and performs such other administrative duties as are assigned to it.

The supply officer, who is a major or a captain from squadron headquarters, operates the supply division of the office, which handles all classes of supply and salvage matters.

The transportation officer from the squadron headquarters, who also is a major, operates the transportation division of the division quartermaster's office. He is assisted by the commanders of the truck troops and by the commander of the maintenance troop. The commanding officer of the light maintenance troop is division motor maintenance officer. The transportation officer is also division motor officer.

The relationship existing between the heads of these three divisions and the division quartermaster is that of a staff officer to his commanding officer. These officers make such reconnaissances as are necessary and after thorough estimates of the supply situation, submit recommendations to the division quartermaster concerning the work of their divisions. After thorough study and necessary modification, these recommendations are usually transmitted to the division commander as the Division Quartermaster's recommendations, for which he assumes full responsibility. The office of the division quartermaster will usually be located at or near the rear echelon of division headquarters because the offices pertaining to administrative, supply, evacuation and welfare activities of the division are housed there. Whenever possible, the division quartermaster's office and the command post of the squadron should be grouped together inasmuch as all of the staff officers of the squadron perform both squadron and divisional quartermaster staff duties.

Squadron Organization

The quartermaster squadron in the horse cavalry division now consists of a headquarters troop, a light maintenance troop, two truck troops, and a pack troop.

The headquarters troop of the quartermaster squadron, is, in addition to furnishing detachments for squadron headquarters and the division quartermaster's office, divided into a troop headquarters, a gas supply section and a service section. The gas supply section is charged with the operation of the gas supply points in the division and provides drivers for the ten gasoline tank trucks of the squadron. The service section furnishes the necessary labor for operating the division supply points and forms the nucleus of the division labor pool.

The light maintenance troop is organized to furnish the necessary maintenance and repair for quartermaster motor vehicles of the division to include the 3d echelon of maintenance. During protracted and severe operations, this troop will have to be reinforced by Corps or Army maintenance units for it does not have the capacity under such conditions to maintain all the vehicles in the division. It is organized into a troop headquarters, a supply platoon and two maintenance platoons. The maintenance platoons are capable of operating one mobile repair shop each. There is a wrecker section containing one 4-ton wrecker and one 2½-ton wrecker in each maintenance platoon. Those vehicles which cannot be repaired promptly by the combat units will be evacuated to the division repair shops by the wrecker sections of the maintenance troop. The quartermaster squadron may replace temporarily, vehicles of combat units which have been turned in to the quartermaster squadron for repairs and those vehicles which have been destroyed.

One of the truck troops is equipped with 48 4-ton trucks, semitrailer (combination animal and cargo carrier bodies), and the other truck troop has 48 2½-ton trucks, stock rack, also capable of carrying both animals and cargo. The two truck troops provide the necessary means for transporting such reserves as may be authorized by the division commander, furnish transportation for troops and supplies whenever required, provide a source of replacement vehicles when needed by the troops and form a nucleus for a division motor pool. Each troop is divided into two platoons; there are two sections in each platoon, with 12 trucks in each section.

The pack troop consists entirely of animal transportation. It has 4 bell horses, 5 riding horses, 217 pack mules and 77 riding mules. It is divided into 4 platoons and is capable of carrying 20 tons of cargo over terrain impassable by motor transport. It can keep up with the horse cavalry moving at normal gaits.

Operations of the Quartermaster Squadron

Before discussing operations, it might be well to restate a few basic principles:

First:—"The impetus of supply comes from the rear

1—Part of service section Headquarters Troop, 16th QM Squadron sorting and loading Class I supplies at 1st Cavalry Division railhead. 2—Class I supplies for 7th Cavalry at railhead. Forage has not been unloaded. Class I supplies for this regiment will weigh over fourteen tons. 3—Guides getting their instructions at Class I control station. One unit train about to move out. Commander in motor cycle sidecar, messenger on solo. 4—Pack Troop, 16th QM Squadron, 1st Cavalry Division, unloading from trailers preparatory to transporting ammunition over terrain impassable by motor vehicles. 5—Gas section of service platoon, Headquarters Troop filling ten gallon drums by means of "Milker" attached to tank truck. 6—Troop C, 16th QM Squadron, Light Maintenance, replacing engine in vehicle in the field.

and is applied through all echelons down to include the front line units." It should be the recognized duty of each echelon of supply to deliver supplies to the area of the next lower echelon and this system should be modified only when the tactical situation requires a departure therefrom. This principle is based upon the precept that battle commanders should be relieved of all anxiety concerning questions of supply other than making their wants known.

Second:—Supply operations for all classes of supply are conducted by either regimental or divisional transportation moving from army supply points to the using troops, and such supplies are not normally transferred to other trucks or placed in dumps, from the time they are received at army supply points until they are delivered to the using troops. Neither should the troops be burdened with a greater quantity of supplies than is necessary for their well-being.

The division commander, through his subordinates, must insure that the requirements placed on the subordinate units for the utilization of their transportation in effecting supply are not excessive. In order to arrive at a decision regarding the matter he must evaluate the tactical situation, the reserves to be carried, the probable expenditure rate, the distance involved, the routes available, and the restrictions imposed by higher authority, and the terrain. The quantity and type of rations to be carried by individuals and on unit and divisional trains as a prescribed load is announced from time to time by the division commander. The following factors will influence his decision: "Probability of combat, distance to army supply points, defiles, amount of transportation available, character and condition of road net, danger of hostile air and mechanized attack, and the probable relative urgency of Class I supply versus other supplies."

The division quartermaster should constantly anticipate the needs of the front line troops. His actual responsibility begins with the transmission of the requisition or daily telegram and is continuous until the supplies are delivered to each regimental or similar unit of the division. In general, the quartermaster should make distribution of all supplies whenever the situation permits. The daily telegram is based upon the strength returns of the division. It is prepared by the division quartermaster and forwarded to the army quartermaster, who consolidates the daily telegrams of all units and transmits this consolidated daily telegram to the regulating officer. The regulating officer ships the supplies directly to the division railhead or truckhead.

Standing operating procedure in the 1st Cavalry Division covers the handling of Class I distribution very well by enumerating all methods and combinations of methods and designating in orders the one which best fits the tactical situation. These methods are designated as methods A, B, C, etc. At times unit transportation comes to the railhead for rations, and the grain and hay is loaded and transported in divisional trucks. Some units such as the services and others who may be close to the supply point habitually use railhead distribution thereby freeing divisional transportation in supplying front line units. The 1st Cavalry Division has been very successful in the distribution of Class I supplies by establishing at or near the railhead or distributing point a Class I control station and by the habitual use of guides furnished by the units to be supplied. These guides report to the officer in charge of the Class I control station where they receive their instructions. It is the responsibility of the guide to lead the train to the bivouac of his unit.

Since the gas consuming vehicles of the division have increased so greatly, one of the more important duties of the division quartermaster is to supply the division with gasoline and oil. However, with the ten tank trucks now furnished the quartermaster squadron, plus its 400 ten-gallon drums and the liberal allowance of drums to be carried by the combat elements of the division, it should not be difficult to work out a scheme of supply whereby empty drums in the units can be replaced promptly with full ones by the division quartermaster. Of course the reconnaissance squadron with its 225 gas consuming vehicles will present a special problem. Normally this squadron will be out in front a comparatively great distance and probably widely dispersed. Nevertheless, with sufficient planning and ingenuity this unit can be supplied. Special gas distributing points will have to be established for them. The division quartermaster should dispatch a sufficient number of filled drums and portable gassing units to these points to fill the bill. A word about the portable gassing units, or "milkers." You will note in the illustration that one unit consists of one or more tankers, one trailer, with pump and eight outlets, and a 2½-ton truck with filled or empty cans. With the pump and eight outlets one 750-gallon tank truck can be emptied in about 15 or 20 minutes. It is possible to fill 100 cans in this manner in approximately 25 minutes, and it is also possible to gas eight trucks simultaneously if such method is desired.

Training

I am convinced that a change in the attitude of the combatant arms regarding the problem of supply is imperative. No matter how well trained the troops participating in an operation may be, such operation is doomed to failure from the beginning unless the essential ammunition, water and food is delivered to the troops when and where needed.

The individuals of the quartermaster squadron in a horse cavalry division are going to be called upon to endure untold hardships in campaign. They must be able to work long hours with little rest. They will be the constant prey of enemy aircraft and mechanization. Therefore these men must be physically strong, intelligent, mentally alert, aggressive, and resourceful fighting men. They should be just as highly trained and

just as well disciplined as soldiers of the combatant arms.

Every effort should be made to relieve the officers, men and equipment of the quartermaster squadron from post administrative work to the end that the individuals of this unit may be adequately trained in accordance with well balanced training schedules, and that the vehicles and equipment of the squadron may be kept in first class condition at all times. This cannot be accomplished if the men and equipment are used day in and day out in post administrative motor pools and engaged in other purely post housekeeping activities.

Too much emphasis cannot be placed upon the necessity for individual and group training of soldiers in quartermaster tactical units. They must be made disciplined, fighting soldiers first, and this element of their training must be carried on continuously throughout the period of service. In the cavalry division especially, the quartermaster squadron will frequently be required to provide protection for the division supply installations and its own supply columns. In order to meet these requirements the squadron must have soldiers with sufficient individual and group combat training to perform the job.

A word regarding the training of the squadron as a whole, to prepare it for its duties and functions in the field. In the 1st Cavalry Division we are attempting to curtail as much as possible the post administrative work which the squadron has been called upon to perform, and to handle all of the supply duties in the post that we would be called upon to perform in the field, with the necessary modifications due to garrison duty. For example, we are handling the deliveries of forage and gasoline, and the issue of rations to the troops. This has been of great value in training newly-arrived officers. It not only serves to acquaint them at once with some of the problems with which they will be confronted in the field, but it also serves to acquaint them with the individuals whom they must serve in the field, thereby establishing better understanding all around.

In field exercises and maneuvers the squadron is required to perform all of its supply functions. Railheads are set up and Class I and III supplies are distributed in accordance with the various methods. The breakdowns of supplies are made by all supply sections, down to include the troops and batteries. The ammunition supply is injected into the situation and the divisional transportation is required to carry its service load or the equivalent in weight and bulk. While on this subject I wish to call attention to something which I believe has been overlooked in the training, organization, and equipment of the service elements. I refer to a lack of training and means for defense against hostile aircraft and mechanization. The 1st Cavalry Division is experimenting with machine gun mounts for trucks. The guns to be manned by assistant drivers and others. I understand the 1st Cavalry Division is to receive 172 of the new Bantam cars. It may be that a platoon of these cars carrying antiaircraft and antitank guns can be attached for the protection of the squadron. At any rate it is something to think about. The present armament of this squadron consisting of 451 pistols, 100 rifles, and 9 automatic rifles is inadequate for defense against air and mechanized attack.

Conclusion

In closing let me point to the splendid spirit and morale of the officers reporting for extended active duty, and of the selectees also. They are displaying wonderful enthusiasm and they are putting their best into the job. Those of us with longer service and larger experience must realize that this is an army composed largely of inexperienced officers and young soldiers. We must avail ourselves of every opportunity to instruct these people and pass on to them the results of our experience and training.

Unit train loaded and ready to move out. Commander getting instructions at Class I Control Station

Supply of Horse Cavalry Regiment

By S-4

EDITOR'S NOTE: *This is the second of a series of articles on this subject.*

* * *

CONTINUING with our discussion of the supply of the horse cavalry regiment from the point where we ended in the January-February issue of The CAVALRY JOURNAL, let's examine the duties of S-4 prior to the start of the march.

When the regimental commander returned to bivouac after a conference with the division commander, about 3:00 PM this (Monday) afternoon, he held a conference of his staff, squadron, and troop commanders. He informed them that:

The division was to move up into the combat zone starting tomorrow (Tuesday).

The regiment would be the only unit moving on Tuesday, and the division commander's plan contemplated that it would operate a day's march ahead of the remainder of the division for the time being.

The division commander expected operations would be for an extended period and would become progressively arduous.

All organization commanders were expected to depart with all men completely equipped, all horses well shod and in good condition, and all organizational equipment complete in every detail. Troop commanders to advise S-4 of any requirements immediately after the conference.

The first day's march would be approximately 35 miles, and the regiment would march at daylight tomorrow.

The regimental commander then dismissed the squadron and troop commanders, but had his staff remain for further conference in which they were informed:

The route and destination of the first day's march.

Formation of the march column and rate of march.

Planned employment of the regiment for the next three days as given him by the division commander.

That he wished to march at all times as light as possible, the horses carrying a minimum of weight.

That he wished to conserve his own men and transportation as much as possible in effecting supply of the regiment.

That he wished to issue his march order (orally) not later than 8:00 PM, and that all members of the staff would submit any required details to him by 7:30 PM.

Where does this leave S-4 and what must he do as a member of the staff team? There will be plenty to keep him occupied. No matter how completely we think we are equipped there are always some last-minute items which the troops must have: horseshoes, nails, a grain sack, a few parts for small arms, a lantern; a myriad of small items will always be needed. Then the rest camp must be vacated and camp property must needs be checked with a representative of the Quartermaster when the regiment leaves. And he must plan and arrange for the supply of the regiment for the next three days on the basis of its planned employment as outlined by the regimental commander.

On coming out of the colonel's office S-4 was immediately besieged by the troop commanders who had been lying in wait for him; all except one (C Troop) were present. After listening to their requests he found that all of them had only minor requirements. He advised them that all necessary items would be available at the supply tent at 6:00 PM, and to send for them there. At the same time he informed them that he, or a representative, would visit the troops, starting with headquarters troop at 7:00 PM, to check camp property; that it should take about ten minutes per troop to make the check, and that all troops should have their memorandum receipt, together with a list of shortages and damaged property, available in the orderly room at that time.

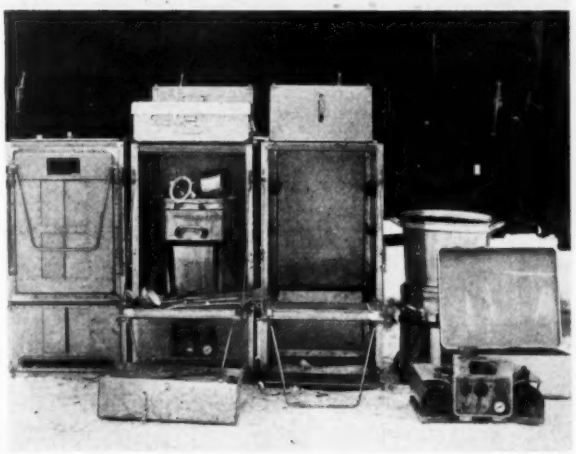
Asking the troop commanders to wait a moment, S-4 consulted S-3 and then returned to inform the troop commanders that:

Cantle rolls and troop headquarters pack loads (ration, kitchen, and ammunition pack loads) would be transported on the trucks tomorrow.

Kitchen trucks would report to troops for loading at once.

Combat (ammunition) trucks would report to troops for loading by 6:00 PM, after they had completed the hauling of rations, forage, gasoline and oil for tomorrow.

S-4 then left headquarters and went to his office next to the supply tent. Upon arriving there he advised the regimental supply sergeant as to the time the regiment would march in the morning; gave him a list of



Above: 2 trucks of Regimental Train allocated to Troop E, 2d Cavalry, with loads. Right: Close-up of new type range

the small items required by the troops; gave him instructions about securing items not on hand in the supply tent, and told him the troops would come for these supplies at 6:00 PM. Also he instructed the supply sergeant that if he (S-4) was not present at 7:00 PM, the sergeant was to check camp property with the troops at that time starting with headquarters troop.

Not having contacted the C Troop commander, S-4 opined aloud that he would have to send down to the troop to find out what they needed and to inform them of the time for checking camp property. The supply sergeant informed S-4 that the captain of C Troop had sent his troop supply sergeant for a few small items about fifteen minutes ago and the sergeant had stated that was all the troop would need, and that at the time the troop commander was checking over his camp property and would have the memorandum receipt and a list of short and damaged articles ready in a half-hour. And S-4 mused: just like that little fellow; never says much; doesn't pester you and always seems to be a jump or two ahead of all the others: nothing to worry about when it comes to C Troop.

About this time the lieutenant commanding the transportation platoon came in and S-4 gave him instructions about dispatching the kitchen trucks to the troops at once; to haul tomorrow's rations, forage, gas and oil right now and when that is done to send the ammunition trucks to troops; to be sure all extra containers are on all trucks sent to troops and are filled with gasoline; and that the service tanks of all trucks are filled to capacity before sending the trucks to troops. This lieutenant had just reported to the regiment for duty and S-4 felt it necessary to give him detailed instructions; later when he knew him better and if he proved "good," such instructions would be of a more general nature under similar circumstances.

Picking up the camp phone S-4 called the regimental surgeon, who had been with the regiment for a long time, and inquired of him if he was in need of any supplies or assistance from S-4. The surgeon replied that he had everything shipshape and for S-4 to forget the medical detachment in his worries, and that that went for the Veterinarian too. S-4 thanked heaven for good surgeons and C Troop captains and hung up; there was no time to chat about the weather.

S-4 then informed his regimental supply sergeant that he was going to visit the division G-4 and that after that he would go to the quartermaster's; probably would be back within an hour.

On going to the vehicle park, next to his office, he contacted the lieutenant maintenance officer; asked him about the serviceability of all motor vehicles in the regiment; advised him as to the departure of the regiment, and instructed him to be sure his tools and spare parts were complete.

On his way to the office of G-4 in his ½-ton command truck S-4 has a little time in which to mull over details of his plan for supplying the regiment for the next three days. While he has been busy since leaving the colonel's office, nevertheless being a nimble-witted fellow his mind has been active and he has his general plan pretty well outlined in his mind. He must learn

certain details from G-4 before he can be certain of his plan and submit it to the regimental commander. The most important items on which he must have information are:

Will the daily requirements of rations, forage, gas and oil be delivered to the regiment by means of quartermaster trucks, or will the regimental trucks have to be used for this purpose?

Will hay be obtained through supply chanels, or be procured locally wherever possible in order to reduce haulage, and if so in what manner?

Contemplated location of supply points (railhead or truckhead) each day of the three.

Are there any restrictions as to movement of supply transportation as to routes, size of convoys, speed, or use of lights at night?

Authorization to obtain from the quartermaster today one Type C and one Type D ration for the regiment.

Will ammunition be available at railheads or truckheads, or only from Army depots; if the latter, where are they located?

And much as we hate to say it the "credit" of ammunition available to the regiment; this in accordance with division SOP which provides for sub-allotment of the divisional ammunition credit to regiments in the cavalry—why? S-4 can't figure it out and neither can the author, but the infantry do it, so there!

Will the division attach sufficient quartermaster trucks to accompany the regiment to carry the regiment's proportionate share of the ammunition transported in the division train?

Anticipated time supplies will reach the regimental bivouacs daily, if they are to be delivered by division transportation; otherwise time it is expected such supplies will be available at supply points.

After a short ride S-4 arrives at the office of G-4, where he hopes to transact his business in a hurry. However, G-4 is in conference—S-4 must wait. And there are three others waiting also, two majors and a lieutenant colonel. S-4, a mere captain, informed the office clerk of the nature of his business with G-4 in the hope that he might be given the priority of attention which he felt his business deserved. But it was a vain hope. Finally it was his turn and he was getting along famously—this G-4 is really a helpful individual, when in walks a colonel, the provost marshal, and a good friend of G-4 having the run of his office. A traffic accident has just occurred, etc., etc., After better than ten minutes of interruption, the PM departed and S-4 was able to complete his business and depart.

He left G-4 possessed of the following information:

Rations, gas and oil, grain and hay would be delivered by division transportation to the regimental bivouac tomorrow night not later than 9:00 PM. For the following two days the situation would have to govern, but it was probable that at least some of the regiment's supplies would have to be hauled in regimental trucks.

Hay would be available through supply channels for tomorrow and the next day; after that it would depend on the situation. In the event it should be decided to procure hay locally a message to this effect would be forwarded to the regiment including instructions as to method of procurement to be followed.

Gas and oil would be delivered through supply channels until further instructions, but in the event a local supply of 5,000 or more gallons should be discovered it should be promptly seized and guarded and report of its location made to division by radio or wire.

The planned locations of the division supply points: railhead for Wednesday night and railhead or truckhead for Thursday night were within ten miles in each case of where it was planned to bivouac the division.

There were no restrictions as to routes, size of convoys, or speed within the division zone at present. Probably the use of lights would be restricted on all vehicles within ten miles of the front lines. The regiment would if everything went well pass the present front lines on Wednesday morning.

One each of Type C and D rations for the regiment would be drawn from the division quartermaster before departure of the regiment.

Initially ammunition beyond that carried in the division train would be available at an Army depot located at ——, about fifteen miles in rear of where the division would cross the present front lines.

The regimental credit of ammunition at this depot consisted of so many rounds of each of the different calibers required. Roughly it equalled approximately five times that carried in the regiment normally.

Trucks of the division ammunition train carrying the regiment's proportionate share of ammunition transported by that organization would not be attached to the regiment, at least initially.

If regimental transportation is required to haul daily supplies from division supply points such supplies will, except in emergency, be available thereat by 9:00 PM daily. And because of the distance the regiment will be advanced beyond the remainder of the division its trains will be loaded at whatever time they arrive, disregarding any schedule for other units. A real concession.

It is true that S-4 left G-4's office without much real definite and dependable information. It is the "phog" of war becoming apparent early in the game, much too early when we consider that "supply" is the only part of military science, subject to exact analysis and complete solution. However, it will probably get much worse before it gets better as the going gets harder, and anyway S-4 is resourceful and energetic.

Returning to his office by way of the camp quartermaster's, where he made arrangements for a representative to come to the regiment to check camp property at daylight tomorrow, S-4 on arrival gave immedi-

ate instructions to send transportation to the division quartermaster's to obtain the Type C and D rations and to issue them to troops. He then visited the regimental commander to submit and discuss with him plans for supplying the regiment for the next three days. Inasmuch as these plans had to be based on the information S-4 had obtained from G-4 of the division, they were more or less nebulous, but S-4 had every reason to assure the regimental commander that there appeared to be no exceptional difficulties to be overcome, and that adequate supplies for the regiment would be available at the time and places required by the regiment during the first three days.

At this time S-4 also informed the regimental commander of the arrangements for checking camp property; the receipt and distribution to troops of the Type C and D rations; that all minor shortages in equipment had been replaced; and that all trucks would be available to troops for loading not later than 6:00 PM. As the first day's march of the regiment (Tuesday) would be in the rear of the combat zone where combat, except for the possibility of enemy air attack, was very remote, S-4 recommended that the regiment march with all troop train (ration, kitchen and troop headquarters ammunition packs) packs loaded on trucks, and that the regimental train (kitchen, ammunition and maintenance trucks) march grouped under S-4 control, moving via a different route than that of the regiment to arrive at the new bivouac area in advance of the regiment. The regimental commander approved these recommendations and directed S-4 to confer with S-3 to insure the necessary details being communicated to troops when the march order was issued.

In his conference with S-3, S-4 informed him of all details approved by the regimental commander; indicated to him on the map the route he intended to use for movement of the trains to the new bivouac; arranged for S-3 or his representative to meet him at the new bivouac site at 10:00 AM, Tuesday, to determine bivouac areas, and told him, at the time the march order is issued to direct troop commanders that all trucks, loaded and with troop personnel riding on them, would assemble at the regimental vehicle park thirty minutes AFTER the time the regiment would march in the morning.

Please note that S-4 did not require troops to send their trucks to the train assembly anywhere from thirty minutes to an hour prior to the time the troops would march. This latter is a favorite pastime of some regimental supply officers; it is a relic of the days when we were equipped with wagon trains which usually followed the main body, initially without distance. Today there is no real need to assemble trucks prior to the departure of troops, and leaving them with troops until they depart improves loading through its being less hurried, and promotes a better last-minute police of troop areas made by troop personnel riding on trucks. Rarely will S-4 wish to move the train earlier, as he will be busy with other details, and making a final inspection of the regimental camp or bivouac area.

The checking of camp property with troop commanders was completed by the regimental supply sergeant because S-4 was required to be present at headquarters when the march order was issued at 8:00 PM. A few small items had been lost by troops, all expendable by certificate, and there had been a minor amount of damage which could easily come under the classification of fair wear and tear. To save troop commanders detail work the necessary certificates were prepared for signature of the respective troop commanders, and sent to troop orderly rooms to be signed and turned in prior to departure in the morning. S-4 was able to retire and get a good night's sleep feeling that he was well prepared for the morning.

At daylight the regiment marched without a hitch, in the order: 1st Squadron, Provisional Squadron (Headquarters, Machine Gun, and Special Weapons Troops), 2d Squadron, Medical Detachment. The transportation lieutenant was directed to form the train column with vehicles in the same order and the maintenance truck at the rear. The camp property was checked with the representative of the quartermaster, who also inspected the area at the same time. Damages, such as they were, were noted by that officer and the certificates covering shortages were accepted by him, thus giving S-4 a clean bill of health and permitting him to march at 6:00 AM, one hour after the departure of the regiment.

The march of the trains was made in open column formation and proceeded without incident, the trains arriving at a small town about one mile short of the general bivouac area at 7:50 AM. The general bivouac area had been prescribed by higher authority when orders were initially given the regimental commander. S-4 instructed the transportation lieutenant to halt the train in the town, distributing the trucks under available cover, and await his return from a reconnaissance of the bivouac area.

The general bivouac area consisted of land lying on both sides of the road and in all covered in excess of 400 acres. In his reconnaissance S-4 found there were several good-sized patches of woods offering excellent cover from air observation, and two small streams, tributary to one medium-sized stream which flowed through the site. On the outskirts of the town toward the site a dairy farmer had a well equipped with a 20 gpm gasoline driven pump and a 2,000-gallon metal storage tank. The farmer stated that his well was 90 feet deep and the water good. Completing his reconnaissance S-4 roughly outlined on his map areas for each squadron. As located each squadron would have approximately twenty acres, most of it with cover and with cover along the streams where horses could be watered. Trails led into each squadron area over which the trucks could move without difficulty.

Returning to the town S-4 contacted the mayor to

inform him that the regiment would bivouac for the night in that vicinity, and then noted the location of the railroad station, telephone exchange and post office. By this time it was 9:40 AM and S-3 or his representative, and possibly the regimental commander, could be expected at any time. The regimental commander and S-3 arrived at 9:45 AM in the command car, accompanied by the scout-car platoon, and after conferring with S-4 and looking over his map the regimental commander indicated thereon the squadrons which would occupy the areas as selected by S-4. The regimental commander, S-3 and S-4, accompanied by two scout cars which would later guide the rifle squadrons to their areas, went on a reconnaissance of the area. The regimental commander from his reconnaissance is able later to prescribe the necessary security measures for the bivouac, and S-4 will act as a guide and learn of any changes in areas which the commander may direct.

Returning from this reconnaissance S-4 directs the transportation lieutenant to prepare the train for movement by squadron sections, moving each section up to where its leading truck can follow the tail of its squadron when it passes through town. There will be ample road space available for the trucks between squadrons, as each squadron is a march unit with approximately ten minutes' time distance between them. The car commanders of the two scout cars which are to act as squadron guides are given their instructions and posted so they can precede the squadrons on arrival without a halt being necessary.

While awaiting arrival of the regiment, S-4 has time to note down the instructions he will have his clerk type and send to squadron commanders immediately after arrival in bivouac. These instructions will cover:

One truck from each squadron to report at once (reasonable time after arrival) to the dairy farm to haul drinking and cooking water for troops of squadron.

Ammunition trucks may remain loaded, their use by regiment not being contemplated.

Location of regimental supply dump where rations, gas, oil, and grain will be issued. Troop details will draw supplies at 10:00 PM.

Troop guides for hay trucks to report at supply dump not later than 8:30 PM; hay expected at approximately that time.

All motor vehicles to be serviced upon arrival in bivouac and empty gas and oil containers to be delivered to supply dump not later than 8:30 PM.

Lights on motor vehicles are prohibited within the bivouac area.

Details of so many men from certain designated troops (arranged by consulting S-1), to report to supply dump at 8:30 PM, for handling and sorting supplies.

Location of regimental dispensary.

By having these instructions prepared and sent to squadron commanders promptly after the regiment arrives in bivouac, S-4 provides troop commanders with all the information in his possession relating to his staff section. He saves himself many a headache and much work answering individual inquiries, and troop commanders can plan their own affairs with a reasonable expectation that they will not have to change their own plans because the supply officer is incapable of advance planning, or considers that it is enough to issue instructions relative to all details separately and usually ten or fifteen minutes before required execution. If conditions prevent written preparation of such instructions they should be communicated orally, and by S-4 himself, visiting the squadron commanders in turn and as rapidly as his half-ton command truck can take him. Delay in receipt of instructions will result in trucks being completely unloaded, only to be later reloaded; water from unauthorized sources being consumed; messengers or officers making useless trips to learn details which should have been provided them; and a general feeling that things are haywire.

Upon arrival of the column S-4 waits, or stations a representative, to contact the regimental surgeon as soon as he arrives to advise him the source of the water it is proposed to use for drinking and cooking purposes. The surgeon will inspect this water supply as his first act, and should it be found unusable both he and S-4 will be busy locating a satisfactory supply. It is a matter of routine that all troops will chlorinate water used for drinking purposes until such time as orders that this is unnecessary are received.

Just as soon as possible after his arrival in bivouac S-4 estimates the consumption of gasoline and oil for the day and prepares a message to be sent to the division quartermaster advising the amount required for replacement. The day's operations have been normal and the requirements should be for a minimum. Had operations been unusual S-4 would consult the scout-car, motorcycle, and transportation platoon commanders to learn their actual requirements before preparing his message. In this case 500 gallons of gas and 30 gallons of oil will more than meet his requirements for vehicles and cooking ranges.

Early in the afternoon the regimental commander holds a staff conference, at which the plans for the advance of the regiment tomorrow (Wednesday) are discussed. The direction of advance is off the right flank of the main forces and the regiment by marching at daylight should cross the present front line, extended, about 7:00 AM. From that time contact with enemy forces may be expected at any time. However, all available information indicates no hostile forces are in the zone of advance which it is planned to cover tomorrow. At this conference S-4 is in position to make his recommendations on the spot; he is in possession of all information which bears on planning for the supply of the regiment, and probably will not receive any additional information before tomorrow.

Based on a map study he plans for the movement of his trains by bounds except for that part which will

Troop Headquarters' Packs, B Troop, 2d Cavalry

follow close in rear of the regiment. Combat not being probable there appears to be no need for issuing extra ammunition to the men prior to the march. The very possibility of combat, however, makes it advisable that troops march prepared to feed the men and animals the noon and evening meals in the event the trucks are unable for any reason to get up to troop bivouacs. His recommendations to the regimental commander then are:

Troops march with a cooked meal and two feeds of grain on the saddle.

One-third of both the Type C and the Type D ration to be issued to and carried by each man.

One meal (supper) to be carried on ration packs, and kitchen and troop headquarters ammunition packs to march in pack.

Ammunition train and maintenance truck, grouped under S-4 control, to march by bounds in rear of the regiment.

Kitchen train to remain in bivouac prepared to march, grouped under direction of S-4.

These recommendations are approved by the regimental commander and S-4 by checking with S-3 assures the necessary details being covered when orders are issued covering the march. Being particularly forehanded S-4 takes the first opportunity to communicate most of this information to squadron and troop commanders. It permits them to make their own plans just that much earlier and he is fulfilling his job of being really helpful to the troops, not the least of his duties, by any means.

At 8:00 PM S-4 accompanied by a messenger proceeds to a point on the main route into bivouac where vehicles can be diverted to the different squadron areas. He leaves the regimental supply sergeant at the supply dump, giving him instructions to send the troop guides reporting at 8:30 PM to join him, and to start separating rations and grain into troop lots as soon as these supplies arrive at the dump. The convoy from the division arrives a little before 9:00 PM, and consists of seven 4-ton semi-trailers carrying:

4.5 tons rations
9.5 tons grain
2.2 tons gas and oil
11.1 tons hay.

Four of the trailers carry the rations, grain, gas and oil, and three are loaded with hay. The messenger with S-4 acts as guide to conduct the four trailers with miscellaneous supplies to the supply dump at once. The troop guides are placed on the hay trailers and given instructions as to number of bales to be unloaded for each troop, and one trailer proceeds direct to each squadron area where it is unloaded in troop areas by troop details. Before leaving the diversion point drivers are given instructions as to operation without lights and assembly area for trucks when empty, this latter by the convoy commander.

At the supply dump the trailers are unloaded promptly, all supplies being placed in a central location in separate piles. Empty gasoline and oil containers are loaded on the trailers as a trade for a like number of filled containers. As soon as trailers are unloaded they clear the unloading area. Separation of grain into troop lots is an easy job; it will arrive in 100- or 160-pound burlap sacks. Piles are established for each troop; room being available they are located in a circle around the dump, otherwise in any readily accessible locations where they are within reasonable carrying distance from the central piles and can be directly loaded onto troop trucks. The usual error of placing piles close together and practically within the central dump is not made by the regimental supply sergeant, who is an old hand. C Troop again gets the jump on the other troops, sending their detail in the kitchen truck. As a result their supplies when separated are loaded directly onto their truck, avoiding double han-

dling and permitting supplies to reach the troop at the earliest possible moment.

Separation of rations and grain into troop lots is based on troop strengths in men and animals. Some troops are bound to receive slight overages and shortages of certain items; the supply sergeant will note those of any real consequence and even the score next time. Condiments of the ration (salt, pepper, spices, etc.) will be received about every fifth day when the quantities due each troop permit easy division. Filled containers of gasoline are sent to troops based on the empty containers they turned in. Oil in containers is issued to headquarters and service troop only, where it should be divided between the transportation platoon and the maintenance section.

When all supplies have been issued to troops and loaded onto their kitchen trucks and gone to troop areas, and the order for tomorrow's march has been issued covering details as previously recommended, S-4 can make use of his bedding roll and anticipate that his night's rest (what there is left of it) will be undisturbed. Tomorrow will be another day and the chances are it will not pass off as smoothly as today did. As time and the regiment advance, the situation will become more or less confused; information and deliveries from higher echelons will be less definite, and S-4 will have to meet each situation promptly if he is to efficiently carry out his duties of aiding the regimental commander as a member of the staff team, and serve the troops with adequate supplies when and where needed. All in all today's operations have practically been those normal to an ordinary training march conducted by the regiment back in the days of its initial mobilization and training. S-4 rolls over and sleeps soundly.

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A Salute

By Lieutenant Cary I. Crockett, Jr., 15th Cavalry (RAI)

A stray truck on some inconsequential errand stood by the barracks back door. Its driver tenderly rubbed a rag over its bright work.

An officer stepped into the graveled area and made toward the door, his mind bent on making short work of the routine ahead.

Perhaps it was the crisp uniform and glistening boots, or the recently completed breakfast and the cool sunrise, or perhaps the cumulative effect of all of them which produced in him an almost intoxicating sensation of physical well-being.

It manifested itself in an erect carriage, a ramrod back, a brisk and determined stride, a bright and cheery eye. He passed before the refuse cans as though they were a row of generals.

The driver turned at the crunch of the footsteps and made ready to salute. Automatically, he pulled his heels together. A perfunctory slash of the hand would satisfy the regulations.

Then, he sensed the wave of enthusiasm which preceded the officer, and instantly prepared to participate in it. His shoulders squared and his chest swelled. His chin lifted and his right hand rose, then flicked to position. Aware that his precise performance of a little military ceremony was well received by an appreciative audience, he let a confident grin meet the officer's confident grin.

In that passing instant during which their hands made perfectly coördinated downward arcs, there was welded together a superb union of mutual respect and confidence. Two individuals perceived each other's abilities, admired them, and made outward recognition of the fact in the traditional greeting of men of arms.

It was a distinct pleasure.

COMMUNICATIONS Within the 4th Cavalry

By Lieutenant Nathan B. Belgrade, 4th Cavalry

THE 4th Cavalry (H&M), one of our two Regular Army Corps Reconnaissance Regiments, is charged with the responsibility of performing reconnaissance and other cavalry missions within its capabilities.

One of the most essential requisites of the efficient performance of this responsibility is that of Signal Communications.

The means of communication within the Regiment are: Radio air-ground, scout car or motorcycle messenger, horse messenger and runner.

In order to thoroughly understand the system of communications employed, a knowledge of the organization of the Regiment is necessary.

Organization

The 4th Cavalry is a Horse and Mechanized regiment consisting of: The Regimental Command and Staff Section, two Squadrons, (one Horse, one Mechanized), Headquarters Troop (less Regimental Command and Staff Section), and Service Troop.

The Regimental Command and Staff Section contains seven vehicles, radio equipped and one vehicle not equipped with radio.

The Regimental Commander, Regimental Executive Officer, S-2, S-3, S-4, and Regimental Communications Officer each has one scout car with radio.

The Regimental Message Center is transported in a radio equipped reconnaissance car, and the Operations Section in a one-half ton pick-up truck.

The First Squadron (Horse Portée) consists of Squadron Headquarters and three Rifle Troops ("A," "B," and "C"), each being equipped with pack radio set.

The Second Squadron (Mechanized) consists of two scout car Troops, ("E" and "F") and a Motorcycle Troop ("G").

"E" and "F" Troops each are composed of Troop Headquarters and four platoons, each platoon having two sections. Each section consists of two radio equipped scout cars.

Troop "G" is composed of Troop Headquarters and four motorcycle platoons. One radio equipped scout car is assigned to each platoon.

Headquarters Troop consists of a Troop Headquarters Section, a Pioneer and Demolition Platoon divided into three sections (one radio equipped scout car for Platoon Headquarters), an Antitank Platoon divided into three sections (one radio equipped scout car per section, and one radio scout car for Platoon Headquarters) and a Communications Platoon (one radio equipped scout car and one radio equipped reconnaissance car, operating in the Regimental Command and Staff Section).

Service Troop consists of a Troop Headquarters Section, Regimental Transportation Platoon, Motor Maintenance Section, and six Portée Sections. Radios are installed in three scout cars and eight reconnaissance cars.

Radio Nets and Types of Radio

There are seventy-six radio sets authorized, organized into radio nets, within the regiment as follows:

Radio Nets		Type of Radio
1. Regimental	5 Stations	1 (SCR 203); 3 (SCR 245) 1 (SCR 193)
2. 1st Squadron	3 Stations	3 (SCR 203)
3. 2nd Squadron	4 Stations	4 (SCR 245)
4. Troop "E"	19 Stations	19 (SCR 245)
5. Troop "F"	19 Stations	19 (SCR 245)
6. Troop "G"	5 Stations	5 (SCR 245)
7. Headquarters Troop	6 Stations	6 (SCR 245)
8. Service Troop	9 Stations	1 (SCR 193); 8 (SCR 245)

Free Lance Stations

Regimental Commanding Officer	SCR 193
Regimental Executive Officer (in Corps Net)	SCR 193
Intelligence Officer (in air-ground net)	SCR 193
Plans and Training Officer	SCR 245
Regimental Supply Officer	SCR 245
Regimental Communications Officer	SCR 193

Activity of "Free Lance" Stations

The Regimental Commander is a free lance agent, free to communicate with any net in the regimental system, and to move his car at will wherever his presence may be required.

Responsibility for communication with Air Service by radio rests with S-2.

The Regimental Supply Officer by virtue of his free lance status may communicate on any regimental net and move to expedite his supply responsibilities.

The Plans and Training Officer's set is a free lance so that full time may be devoted to his own activities without being involved in any tactical net.

The Regimental Communications Officer is semi-free lance, normally with his Radio Set as the Net Control Station in the regimental net. At times during tactical situations, he may be required to leave the Regi-

mental Command Post to reconnoiter along the axis of communication to designate alternate command post areas. Should this movement be required, he turns the Net Control over to the Message Center Car and moves to the new command post area, plans disposition and location of vehicles and his radio takes over Net Control while the Regimental Command Post is en route to the new command post area. In addition, he monitors the sets of the regiment.

Method of Communication

Normally the Troop Executive Officer's radio set operates in the net of the higher unit, leaving the Troop Commander's Set to control the Troop Net. The Troop Commanding Officer and the Troop Executive Officer are together.

Communications from advance units reach the Regimental Control Set in the following manner:

Information gained is transmitted from Platoon Headquarters to the Troop Commander on troop frequency.

The Troop Executive Officer, who is in physical contact with the Troop Commander but operates forward on the squadron frequency, passes information on to the Squadron Commander.

The Squadron Commander condenses all information received from advance units, and by the use of his Squadron Executive, who is in the Regimental Net, passes such information, on the regimental frequency, to the Regimental Control Set.

Pertinent information, gained by regimental agencies is passed on to Corps by means of the Regimental Executive Officer, who operates on the Corps frequency.

Radio Maintenance

Radio maintenance in the field is accomplished by the use of a two and one-half ton truck equipped with necessary tools, instruments, and repair personnel.

Frequencies and Call Signs

The regimental communication system requires a total of eighty-four (84) call signs, (including net call signs). Eight frequency channels are necessary. Assignment of frequency channels, call signs and modes of emission, are authorized by the Army Commander.

Use of Common Frequency Channel

Authorization of two additional frequency channels would facilitate control in "E" and "F" Troops, each having 19 radio sets, and normally only the Platoon Commander's radio would be operating, resulting in one set representing the four cars of the platoon. Thus only four sets would work with Troop Headquarters.

But, should a situation arise where the four platoons were given a mission of reconnaissance which required the Platoon Commanders to assign a distant area to their second sections, a lack of control is evident, as any radio communication with the isolated sections would tend to jam the troop frequency.

To alleviate jamming of a frequency channel assigned to a unit with a large number of stations, the adoption of an auxiliary receiver and transmitter for each vehicle, similar to the walkie-talkie, occupying a small amount of space, and operating on voice with a limited range of not over five miles, would be the answer for the purpose of control between cars and commanders.

Assignment of Type Sets

The Regiment is authorized three types of radio sets: Namely, SCR-203, SCR-245 and SCR-193.

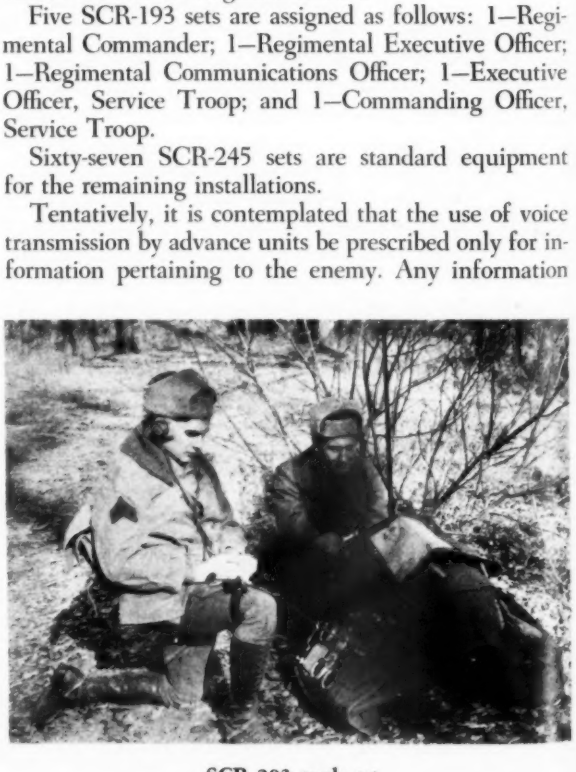
Allotment of types of radio is prescribed in Tables of Basic Allowances. The SCR-193 being the most powerful, with a normal range of 75 miles using C.W., is delegated to key personnel. The SCR-203 is a pack radio normal to horse elements. It has a range of 45 miles using C.W. The SCR-245 is a set capable of operating at a range of 45 miles using C.W. and with a crystal controlled transmitter. Most of the 4th Cavalry vehicles are equipped with this type of set. All types are capable of C.W., Tone, and Voice.

Four SCR-203 sets are assigned to the horse elements. The Commanding Officer, 1st Squadron normally attaches himself to one of his three troops, which automatically becomes the Net Control Station of the Squadron Net. The Squadron Commander's set continues to work in Regimental Net.

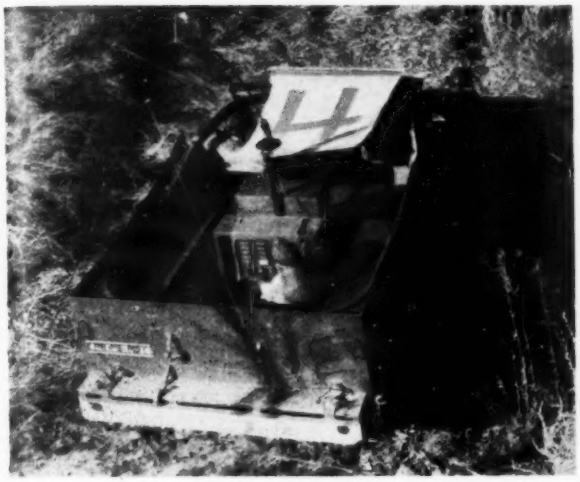
Five SCR-193 sets are assigned as follows: 1—Regimental Commander; 1—Regimental Executive Officer; 1—Regimental Communications Officer; 1—Executive Officer, Service Troop; and 1—Commanding Officer, Service Troop.

Sixty-seven SCR-245 sets are standard equipment for the remaining installations.

Tentatively, it is contemplated that the use of voice transmission by advance units be prescribed only for information pertaining to the enemy. Any information



SCR 203 pack set



Identification panel

relative to our own actions, locations or dispositions is sent by C.W. combined with abbreviated codes as prescribed in *Standard Operating Procedure, 4th Cavalry*.

Signal Operating Instructions

For training purposes, the Signal Operating Instructions, 4th Cavalry, includes a geographical prearranged code supplemental to the Air-Ground and Division Field Codes, and a list of key phrases for the cypher device M-94.

It also includes an abbreviated code to facilitate control, and to allow a means of warning against the three most rapid forms of attack: Air, mechanization, and gas. This is accomplished by the transmission of a designated letter in groups of threes, repeated a number of times. Included also is a verification code to establish the authenticity of a message. A reference concerning call signs and frequencies is listed. This training edition, in the form of a pamphlet is issued to all communication agencies within the 4th Cavalry.

Air Ground Communication and Identification

Air ground communication is accomplished by radio, panel and pick-up messages. One set of panels and pick-up equipment is carried in the Communication Officer's car. For communications using panels, a Panel Corporal and personnel in the Command Section operate together. Pick-up is performed by the same personnel, who must be well trained for this means of communication.

Identification when on the move is accomplished by a display, from the Communication Officer's car, of a light canvas panel with a large figure four, in blue on a yellow background.

This panel is operated on the same principle as a window shade, having a spring action rod which allows the panel to be rolled when not in use.

Messengers

Motorcycles, scout cars or horse messengers are employed also as a means of communication.

Messenger communication in general is dependent on weather conditions, distances involved, terrain, road net, proximity of the enemy, secrecy, and time factors involved in various situations.

Selected personnel are given training for messenger service by instruction in message handling, care of mount (whether horse or machine), map reading, scouting and patrolling, loyalty and courtesy.

For motorcycle messengers, the use of a three-foot light wooden rod with a clip attachment, facilitates delivery of messages from car to motorcycle or vice versa while moving. The message is clipped to stick and held from vehicle to receiver. A six-foot piece of light rope with a message packet attached, has been used with success for this purpose. Also Motorcycle Messengers (M) and horse messengers (H) are available as follows:

Troop "E"	5(M)	Troop "A"	10(H)
Troop "F"	5(M)	Troop "B"	10(H)
Troop "G"	3(M)	Troop "C"	10(H)
Headquarters Troop	13(M)	2nd Squadron Headquarters	0
Service Troop	4(M)	1st Squadron Headquarters	3(H)

Local Warning Indication

To warn the command, either on the march, or in bivouac, scout cars, either by siren or horns operating from the car battery, give warning of air or gas attack.

Radio Operator Relief

At the present time, an allowance of but one radio operator is authorized per radio set. As operation of radio communication is continuous during tactical operations of the regiment, a relief of operators becomes necessary.

The scout car driver, being trained in radio operation, is the relief when needed.

Summary

Communications within the 4th Cavalry as it is now organized has been in use but a comparatively short time. Its organization and tactical use are still tentative, subject to alteration.

A system of communications which lends itself to the principles of accuracy, promptness, and briefness is the goal sought.

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The Command Post

Of a Cavalry Regiment (H & M)

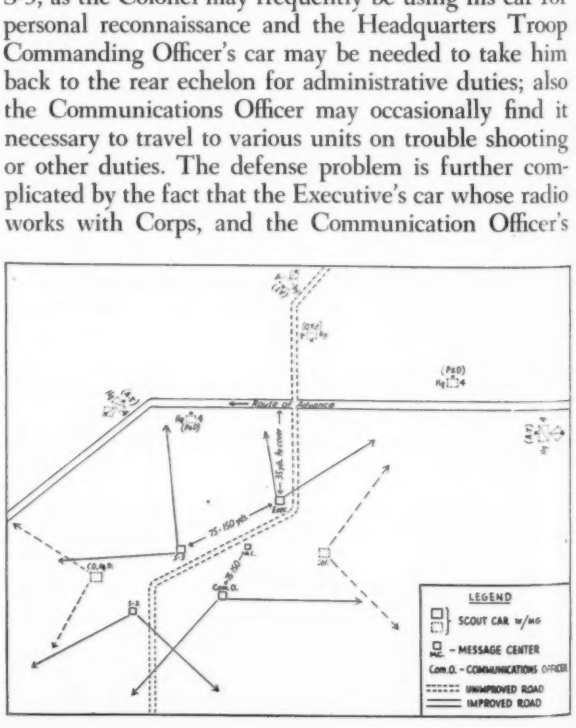
By Captain John F. Rhoades, 4th Cavalry

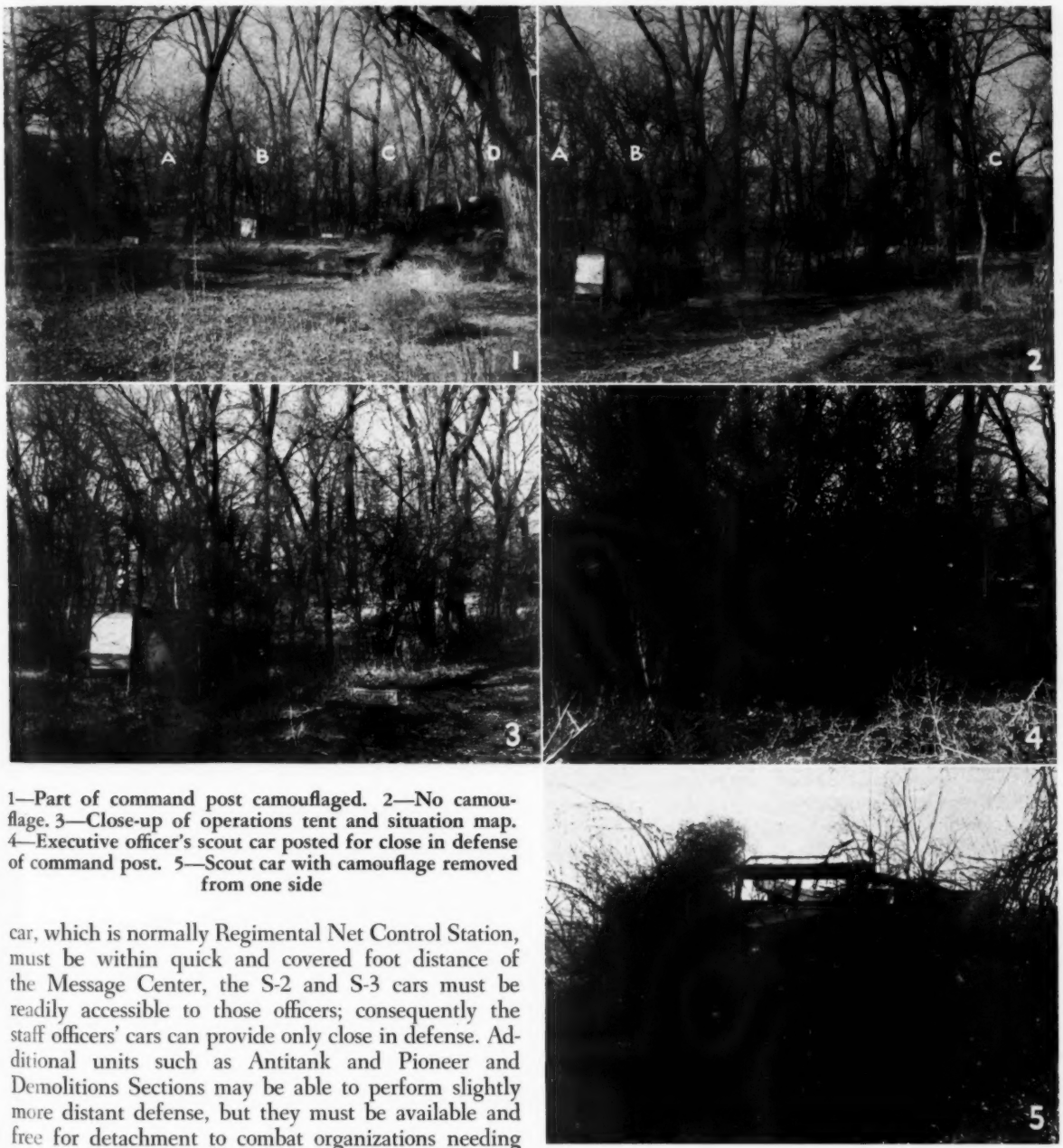
A COMMAND POST in the field is a delicate thing, needing a sheltered protected existence for proper functioning. Unfortunately, a Command Post for a Horse and Mechanized Regiment has a difficult time of it. The Regiment being well in advance of the Corps, in normal operation, the Regimental Command Post must emulate the cactus and provide its own protection on all flanks. I believe that the establishment of this set-up offers several interesting problems and is deserving of thought.

First, let us consider the necessities of our problem. For proper operation, the Command Post must first of all be able to pursue its actions uninterrupted by the enemy. Since the Command Post must be well forward and generally will be in territory occupied by an active and inquisitive enemy, the Command Post must: first, be concealed from air observation; second, and just about equally important in this day of mechanization, it must be well concealed from ground observation from all directions. Next, since even the best concealed organization may be stumbled upon by an aggressive enemy, the Command Post must be capable of fending off minor combat units, and of delaying forces of major strength long enough to enable successful evacuation. Third, the Command Post must be well enough forward to enable the Colonel to secure the necessary information—even if radio communication goes out and messengers must be relied upon. And last it must be so located that rapid occupation and evacuation is possible from the main avenue at march; and so that it is readily accessible to messengers.

Taking into consideration the above requirements, let us now see what tools a Horse and Mechanized Regiment has to work with in meeting these requirements. First, for the bare necessities, the Command Post must consist of the Regimental Commander; the Executive Officer; the S-2 personnel; the S-3 personnel; the Communication Officer and Regimental Net Control personnel; and the Message Center personnel. In addition to the tactical necessities, we have a Regimental Surgeon, and the Hq. Troop Commanding Officer. The necessity for the presence of the former is obvious; the latter is naturally the major domo necessary for the mechanics of establishing, moving, and feeding the Command Post.

These elements provide the means for protection. The Antitank platoon and Pioneer and Demolition platoon, in part or complete, may be in or near the Command Post area, if necessity for their attachment to a forward unit seems imminent. At these times, while in the Command Post, these units would be used for temporarily strengthening the defense of that area. Also, the situation may be such that Hq. Troop may have to attach one of its kitchens to the Command Post. Naturally, the more bulky the Command Post, the more difficult it is to conceal or move in the event of surprise attack; however, there is more fire power available for defense. The resultant compromise between strength and unwieldiness is tempered by the fact that any dependence placed on the action of the Antitank or Pioneer and Demolition platoons may be misplaced as these units must be available for attachment to outlying organizations at any time. In fact, the only defense weapons that can be counted on as being permanently with the Command Post are the armed scout cars assigned to the Regimental Executive, the S-2, and the S-3; as the Colonel may frequently be using his car for personal reconnaissance and the Headquarters Troop Commanding Officer's car may be needed to take him back to the rear echelon for administrative duties; also the Communications Officer may occasionally find it necessary to travel to various units on trouble shooting or other duties. The defense problem is further complicated by the fact that the Executive's car whose radio works with Corps, and the Communication Officer's





1—Part of command post camouflaged. 2—No camouflage. 3—Close-up of operations tent and situation map. 4—Executive officer's scout car posted for close in defense of command post. 5—Scout car with camouflage removed from one side

car, which is normally Regimental Net Control Station, must be within quick and covered foot distance of the Message Center, the S-2 and S-3 cars must be readily accessible to those officers; consequently the staff officers' cars can provide only close in defense. Additional units such as Antitank and Pioneer and Demolitions Sections may be able to perform slightly more distant defense, but they must be available and free for detachment to combat organizations needing their special qualifications as brought out before. The accompanying graphic illustration shows a (not *the*) typical placing of units—dotted lines indicating units that may be expected to leave the area on short notice. This sketch is meant to show a theoretical covering of avenues of approach for mechanization—the road net—not the choice of exact positions as that would be dependent upon concealment and field of fire as determined from the ground itself. The main points are: all staff cars within easy access of the message center and situation map, probably anywhere from 75 to 150 yards apart; all roads covered; every car capable of being covered by another car; in general 360 degrees observation and fire around the Command Post by the combined use of all cars shown; cars or units that may pull out (dotted lines) covering less dangerous areas, so that when they do pull out a serious gap in the defense ring will not occur; such Antitank and Pioneer and Demolition units that may be in use for more distant defense, not put out so far that they can not be rapidly contacted and dispatched to other missions.

Now for a word on concealment. A Command Post repeatedly subjected to attacks from the air or from ground combat units can not function. Naturally, the nearer it is to the enemy the more liable it is to attack;

however, the nearer it is to the enemy the more rapid and adequate the transmission of enemy information and combat orders from the Command Post. Consequently the Command Post will normally be in dangerous territory. It stands to reason that the enemy won't attack that which they can't see; therefore the ideal is 100% concealment. Certain procedure and suggestions might be in order. When a move, forward or back is imminent, an officer *with sufficient guides* should precede the movement sufficiently to locate the new Command Post area and spot positions for *every* car. When the Command Post arrives at the new area each car should be guided to its new position. Delay means halting on the road or subsequent movement of cars to positions affording better cover and for fields of fire. Regardless of miscarriage of plans, all vehicles and personnel should, upon arriving at the new area, *immediately leave the road and dive for cover*. The officer designated to spot the new command post area may be either the Commanding Officer of Headquarters Troop or the Communications Officer; the one left back should supervise the breaking of the old Command Post and conduct the march to the new Command Post area. With regard to concealment of vehicles: For air observation, shadows are the important things. Cars should be placed under, and in the shadows of, trees, brush, or other natural objects. Lacking these, the breaking of the regular outline of the vehicles and placing in swales or folds of ground all help. As for personnel, the white of an upward gazing face is a sure give away for trained observers at moderate altitudes. For ground observation, the dark regular silhouette against the sky or a uniform light background must be avoided. The position on the skyline is of course a suicide position—and to a prone observer the skyline isn't necessarily a high ridge. Here again trees and heavy underbrush afford the ideal cover. Lacking that, strips of grain sacks irregularly hung on the sides of a vehicle tend to blend it with a light background; *fresh* cut branches, brush, etc. tend to blend with a green or dark background. Of course tracks on previously untracked ground will disclose activity at least and lead an air observer to your area; accordingly, leave the highway on a previously established road if possible—if not have vehicles avoid following in trace. Last, movement is sure to catch the eye of any observer —ground or air, accordingly, to avoid disclosure of a Command Post area, cars must be put under cover immediately, or be camouflaged; new tracks must not be made; scouts must be established to give warning of approaching aircraft and for enemy mechanization so that all movement may cease, dismounted men may take cover, and all weapons manned to fire when ordered.

In conclusion, a few general points may be discussed. Marching: The Command Post in movement must move as any other combat unit—by bounds with usual protection. Front, flank, or rear security may be well furnished by motorcycle scouts and messengers; by elements of the Pioneer and Demolition Platoon if present; and by the scout car of the Commanding Officer Hq. Troop. The rate, the destination, the formation and assembly area for the march should be determined in advance and passed on to all drivers and car commanders. Such of these elements as are not covered by *Standard Operating Procedure* should be attended to by the Commanding Officer Hq. & Hq. Troop or his representative. In the Command Post area all cars should be placed in some such manner as described before; gunners should be alerted, given definite sections of observation and fire; and should understand the necessity for all around observation. Air, mechanization, and gas scouts should be established and all gunners instructed to be ready to train their guns on the direction of the attack, as indicated by the warning signal, preparatory to defense. Appropriate signs should be placed on the turn off from the main avenue of march to guide incoming messengers and liaison agents. These signs may be the usual written signs; or for greater secrecy, may be signs based on a color code without written identification of the unit—in the latter case liaison agents and messengers from other units must be informed of the code employed by the Regiment.

Finally, let it be understood that this article is not meant to be a complete study of the subject. It incorporates more ideas than experience and therefore is offered only for consideration.

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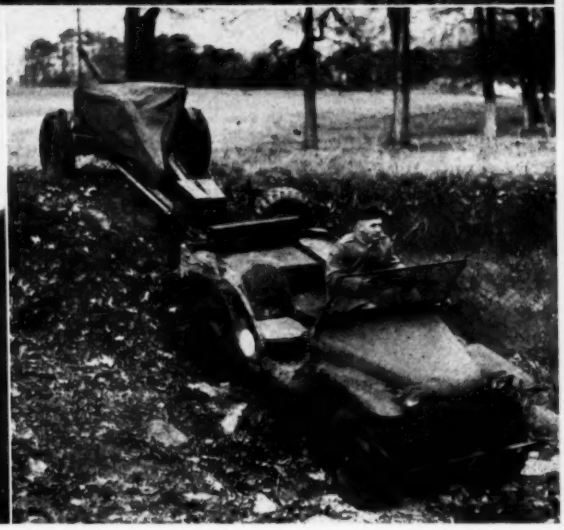
"In war, everything is co-related. Every move has some reason, seeks some *object;* once that object is determined it decides the nature and importance of the means to be employed."—FOCH.



Cavalry's Iron Pony

By Lieutenant George M. White, 6th Cavalry

WITHIN the short span of the past four months, the entire Army has become Bantam conscious. The novelty of these small cars has captured the fancy of all the arms and bids fair to effect major changes in our ideas on cross-country mobility. Doubtless, this idea has kindled the interest of most of the members of the United States Cavalry Association, but due to the small number of vehicles available at this time, very few Cavalrymen have had an opportunity to see them in action and even fewer have had a chance to become intimately acquainted with the Cavalry's new "Iron Pony."

In this connection, a few details on its conformation and manner of going might be helpful. The Bantam weighs stripped, about 2,200 pounds. Gross weight with crew and equipment is figured at 2,700 pounds. The motor is a specially constructed four cylinder Continental engine rated at 45 horsepower. The gear shift is standard with four-wheel drive and auxiliary range transmission at the driver's option. On hard-surface highways the maximum speed varies with different vehicles between 55 and 65 miles per hour. On tactical marches about 25 miles per gallon of gas is normal, while moderate cross-country operation allows from 16 to 20 miles per gallon depending on terrain. At the time of writing, accurate figures on mileage with the 37-mm. AT gun in tow are not available, but indications point to a figure around 14 or 16 miles per gallon of fuel.

Of the eight cars received by the Sixth Cavalry early in December, two were equipped with four-wheel steer. Unfortunately, the low range transmission on these

vehicles could not be used due to mechanical difficulties. This fact put many limitations on our tests and forced us to keep these particular cars on roads most of the time. In this connection it was found that the four-wheel steering car had very poor roadability when driven at speeds greater than 30 miles per hour. And when operated at speeds employed in tactical marches, natural sway and wobble were doubly increased since the rear wheels turned in the opposite direction from the front. Difficulties in parking and in traffic were also experienced. Until further tests indicate otherwise, it appears that unless handled by a superior operator the advantage of the short turning radius of this car is more than offset by the dangers of operation.

Before any discussion on tests is begun, it would be well to outline the reasons why the Bantam was built, what it was expected to do, and what we hope it will be able to accomplish. In the past few years a great many faults have cropped up in connection with the motorcycle sidecar. As a tactical vehicle, it left much to be desired. From a maintenance standpoint, the costs were high and the repairs were frequent, and its cross-country mobility decidedly limited. Thus the need for a more powerful, a sturdier, and a more versatile vehicle was felt. Result: the *Bantam*. Purpose: to replace the motorcycle sidecar. This car will however, do much more than merely fulfill these requirements as the remainder of this story will show.

Preliminaries

As soon as the Sixth Cavalry received its first eight Bantams, the Commanding Officer, Lieutenant Colonel John A. Considine, outlined a testing plan designed to determine the capabilities and limitations of the new cars. Work on this project began immediately. Within the next few days it became apparent that certain modifications were necessary to protect the car and to increase its efficiency as a cross-country vehicle. The most important of these difficulties was removed by the placing of 3/16″ steel shields beneath the front and rear differentials and beneath the oil sump. These plates, properly shaped, were welded in place and serve to protect the vital parts of the undercarriage from shocks sustained in cross-country operation and to lessen resistance to sliding when one or more of the wheels are off the ground and traction must devolve from the remaining wheels. Two small gas cans were built to be fastened by belting straps behind the front fenders on the running board, each can carrying 2½ gallons of gasoline. The emergency hand brake was found to interfere with clutch operation and was moved to a new position alongside the driver's seat. It was also found that the crew had a great deal of difficulty in maintaining the "Riley seat" during cross-country driving and to eliminate this, seat belts equipped with quick-releasing catches were added.

The next group of modifications might be termed as those dealing with armament. These changes followed those mentioned above and were added as new possibilities for employment were explored. The advantage of having the 37-mm. AT gun function with the reconnaissance elements of the Corps Reconnaissance Regiment has long been advocated by Colonel Considine. The Bantam seemed to be the answer to this idea, provided it was mechanically strong enough to operate cross-country with the gun in tow. Also, if this weapon was to accompany the regiment, it was imperative that it be able to go into action very rapidly. If these two problems could be solved, an important step in antimechanized operations would have been made.

The towing hook provided on the car was impractical for this purpose since, due to its position, it allowed the trail spades of the gun to come in too close contact with the ground. Also, the standard towing hook was not designed to be released quickly enough for our purpose. The logical solution then, was a quick-releasing towing coupling designed especially for the job. Captain W. B. Hope, Motor Officer, undertook this problem and designed a coupling which could be released by a lever operated from the rear seat of the car. When the locking pin was removed; the towing ring of the gun, being released, pulled free and allowed the trail to drop to the ground automatically of its own weight. In order to mount this coupling, it was necessary to move the spare tire about 18″ to the left. As soon as this device was perfected and the car with gun in tow tested, it was found that when crossing ditches and other depressions, the trail spades of the gun dug in the bank making the pull harder for the car. To offset this difficulty, a skid which extended far enough to the rear to pass the end of the spades was welded to the chassis. For this construction, ¼″ boiler plate was used to give the skid strength enough to support the rear end of the car. At this point, all that remained was the field test to see if the car could carry the additional load.

Field Tests

The field tests themselves consisted of putting the car through mud and water, over rough ground, through brush, up and down banks, and over every adverse type of ground a vehicle could be expected to traverse—and over a good many that no other type could traverse. Through these tests, it has been proved, beyond any reasonable doubt, that these little cars can and will do far more than even the manufacturers expected. The chief reasons being that they are short coupled; easily handled; and with the low range transmission, possessed of unexpected power and traction. It has also been noticed that in the case of the Bantam, more than in any other, its ability to get out of tough spots is predicated directly on the boldness and ability of the driver.

Since time immemorial, rivers have been considered major obstacles to the advance of an army in hostile

Radio equipped

territory. The one exception has been the Cavalry, who with the help of their horses could swim across with a few supplies with little or no delay. In general, the same is true today of the mechanized and horse reconnaissance elements operating in front of large bodies of troops. Modern times however have effected one change, these leading elements in order to be effective, must have radio communication. Present trends have also shown the necessity of having antitank weapons with all reconnaissance elements, no matter how far forward. It was realized that if the Bantam could be floated on some sort of raft thrown together from materials which could be obtained anywhere in the field, and thus cross large streams with the horses, the problems of communication and antitank defense for horse cavalry operating alone in hostile territory would be solved. Again, as in the case of the 37-mm. gun, the idea bore fruit.

The experiments on the raft and the mounting of the radio progressed simultaneously and with great dispatch. In the latter case, an SCR-245 Radio was chosen for the installation. A standard 12-volt generator was mounted under the hood and the 12-volt battery mounted in a metal container similar to the one used in the ½-ton command reconnaissance car was bolted on top of the rear bumper. The fish pole antenna was placed on a bracket welded to the left side of the car about halfway between the driver's seat and the rear end of the left side panel. A few tests showed that the radio worked equally as well as did those in the scout and command reconnaissance cars. The installation weighed about 250 pounds and no reduction in crew or their equipment was found necessary.

The construction of the raft proved a more difficult problem. To obtain the necessary buoyancy, some light, hollow object was required. The only article of this nature that is always available in the horse and mechanized regiment is the standard 10-gallon gas can with which every vehicle is equipped. At about this time it was decided to utilize the power of the engine to propel the raft and thus gain more speed. Further designs were employed with this in view. In order to secure full benefit from the buoyancy afforded by these cans, they were placed in line between two beams spaced about 10″ apart and secured at each end with an additional short beam nailed in place. The cans were secured to this frame by a rope wound spirally around the improvised pontoon and tied at each end. In this connection, it is only fair to mention that Hydraulics texts were in great demand at Fort Oglethorpe for a few days. The entire buoyant force was obtained from two of these pontoons, one under each side of the car. It was found that 16 cans on each side were necessary to support the car, its crew and their equipment. The only decking used was that needed to support the car and to secure the raft. The whole structure may be held together by rope, wire, lariats, or nails whichever is available. A similar raft was built to carry the 37-mm. AT gun, which required 12 cans to float satisfactorily.

Two types of propellers were designed and tested. The first was built on the principle of a turbine. It consisted of six 18 ga. steel paddles 4″ by 6″ welded to two rings which were equal in circumference to the outside of the tires. At the center of this ring, holes were bored which would allow it to be bolted to the wheel by the lugs which hold the wheel to the axle. One of these paddles was affixed to each rear wheel. When the car was put on the raft, the rear end was lowered sufficiently to bring the paddles in contact with the water. With the motor running at a speed equivalent to about 20 mph a speed of about two or three miles per hour was attained by the raft. The two paddle wheels were the only extra equipment carried by the car. The only objection here was that the raft moved too slowly, so the second type of propeller was designed.

This time it was decided to mount the wheel in the rear and to use the old river boat type of propeller. An old automobile axle was used, and keeping in mind the fact that the propeller must be carried in the Bantam, eight hinged spokes were welded to each end of the axle to carry the paddle boards. With the paddle boards removable and the spokes hinged, the wheel could be collapsed and carried in the car with no difficulty. In addition, a motorcycle sprocket was set on one end of the axle to transmit the power from the drive chain. The spokes were set so that the wheel would be as long as the car was wide, this to assure a straight pull on the chain and sprocket. The paddle boards may be carried or they may be cut from boards on any convenient house, barn, or fence. They are fastened to the spokes by means of wing nuts to facilitate removal. The propeller is secured by "U" shaped cleats to two boards which extend over the stern of the raft to about six feet. The power is transmitted by means of an elongated motorcycle sprocket chain running from a drive sprocket bolted to the right rear

wheel to the sprocket on the axle. Under favorable conditions, the raft will average about 11 miles per hour without straining the motor.

Steering may be accomplished in two ways: by sweeps; or if time permits, by a rudder made of boards and hung behind the wheel. In the latter case the rudder is manipulated by ropes. If the 37-mm. gun raft is used, it is pushed ahead of the car raft and secured by lashing. When the car is floated alone, the raft will comfortably carry the car, radio, three men and their equipment across large streams at about 11 mph. When the gun raft is lashed to the car raft, the crew can be increased to six men and about 400 pounds of ammunition or other supplies. With this load, however, the speed is reduced to approximately 8 mph. The time required to assemble the raft, get it in the water, and get the car aboard is about one hour assuming materials at hand. If the gun raft is to be used, an additional 30 minutes is needed.

At the present time, tests are continuing along new lines. Several types of vehicular mounts for each type of machine gun are being tested. Experiments are being conducted in tactical employment. Further modifications to the vehicle are receiving consideration—for example: moving the gas tank to a new position beneath the front seats to allow more room in the rear of the car for ammunition, extra equipment, etc.

Conclusion

When viewed as a replacement for the motorcycle sidecar, we believe the Bantam to be far superior as a tactical vehicle. Its mobility is far greater, it is easier to operate and therefore fatigue on the part of the driver is markedly decreased. It is heavier than the motorcycle sidecar but its increased power offsets this fact. As is to be expected, its mileage per gallon of fuel is less than that of the motorcycle sidecar but its engine is far stronger and needs much less maintenance. Bantam operators are easier to train and achieve excellence sooner, and the average soldier's enthusiasm for the new "Iron Pony" is at a peak. The opinion of this regiment is that of one old sergeant who was heard to remark, "They may be short on size but they're sure long on performance, I'm for 'em."

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Movement is the rule of strategy.—FOCH.

The Bantam in the Scout Car Platoon

By Captain Bruce Palmer, 6th Cavalry

THE Sixth Cavalry, as explained in the preceding article, has been engaged in exhaustive tests of the ¼-ton Liaison Truck (the Bantam). These tests have been primarily organizational and functional in character, since there is no doubt in the minds of the members of this regiment as to the performance of the vehicle. The Regimental Commander, himself, has demonstrated the extraordinary cross-country ability of the Bantam in extremely difficult terrain.

* * *

TESTING THE BANTAM IN THE RECONNAISSANCE PLATOON

1. Organization Tested

The test organization of the Reconnaissance (Scout Car) Platoon of the Reconnaissance Troop was as follows: 4 Scout Cars; 2 Bantams; 2 Solo Motorcycles.

This set-up allows the platoon leader to split his platoon readily into two sections, each composed of: 2 Scout Cars; 1 Bantam; 1 Solo Motorcycle.

Thus when operating in a large zone which requires the platoon to split, each section has the same vehicles as are available to the platoon. During the test, the platoon normally operated as a unit. However, on occasions when the platoon operated by section, the bantam performed for the section missions similar to those it performed for the platoon.

2. Platoon (or Section) On Reconnaissance

a. BANTAM AS A POINT.

Probably the worst danger facing a scout car platoon is a well conceived and well concealed ambush. By using the Bantam as a point, the platoon in patrol formation can materially eliminate this danger. The platoon leader follows the point Bantam, in the leading scout car; the second Bantam follows the rear section. The Bantam upon receiving fire, upon observing enemy, or upon catching sight of a physical road block darts quickly under cover off the road. The worst thing the enemy can do is to leave the road clear, allow the Bantam to pass unmolested and smash the leading scout car with antitank gun fire. An alert Bantam may detect some movement which will give the position away. However, if the Bantam has passed a likely place for ambush without mishap and the platoon leader still suspects trouble, he can reconnoiter the position by fire. Many a well laid trap has been ruined by an itchy trigger finger. Of course, the platoon can reconnoiter such localities dismounted, but if any speed in reconnaissance is to be attained, risks must be taken.

A good N.C.O. and a trained scout, both armed with the Tommy Gun, were placed in the Bantam, in addition to the driver. As soon as the Bantam runs into trouble and dives for cover, the N.C.O. immediately

Reconnaissance platoon tested—4 Scout Cars, 2 Bantams, 2 Solos

Reconnaissance platoon tested, different angle

initiates reconnaissance of the enemy position, remaining in the Bantam till he is forced to continue dismounted with his scout. In the meantime, the platoon leader starts his cars forward under cover into positions from where they are ready for any type of action, while he goes forward on personal reconnaissance and to get the information brought back by his point patrol.

The Bantam moving quietly down the road operated very successfully during the test as a point. It is amazing how quickly the little car ducked into cover. It is very doubtful whether at any time the Bantam with its speed, maneuverability, and low silhouette would have been a casualty during a point action. The Bantam often cut corners around a suspected ambush and discovered hostile dispositions which might have otherwise caused trouble.

b. BANTAM AS A MARCH OUTPOST.

The Bantam is an ideal march outpost. Moving quickly and quietly to the halted platoon, the Bantam can give warning of an approaching enemy. During a halt, the Bantam can also furnish flank security for the platoon on a vulnerable flank. During the test, the platoon was never surprised at a halt. The Bantam was a great help in accomplishing this result.

c. SECONDARY RECONNAISSANCE.

The Bantam can be sent to reconnoiter roads and trails of secondary importance, while the scout cars cover the primary road nets. The Bantam can move across weak bridges on back trails and reconnoiter areas which would take the heavier scout cars longer to cover. The Bantam can also reconnoiter areas inaccessible to the scout cars.

d. NIGHT RECONNAISSANCE.

The Bantam has the weakness of any vehicle at night, in that it is subject to ambush and capture. Moving cross-country, the driver in order to develop enough power to keep moving, must speed up the engine with resulting noise. In the quiet of night, the noise is audible at several hundred yards. The 6th Cavalry is now working on an improved muffler design which will reduce this noise.

On one occasion during the test, an attempt to work a Bantam cross-country around an enemy outpost at night ended in capture. The outpost troops heard the noise of the motor and sent out a patrol which ambushed and captured the little car.

Moving on roads, however, the Bantam cars move practically without noise. During the test, a scout car platoon one night was seeking an enemy outpost blocking a particular route, in order that dismounted and Bantam patrols might be sent around the outpost to reconnoiter in behind the enemy outpost line. The platoon moved down the road in low gear and without lights, using a Bantam as a point. The Bantam located the enemy outpost without being discovered.

When sending out a Bantam for a night patrol, discretion must be used. The Bantam may be used part of the way, the patrol continuing dismounted. No vehicle, however, can carry out missions requiring great stealth as successfully as the dismounted scout. This is especially true at night, when the ear displaces the eye in importance in the field of scoutcraft.

e. SCOUT CAR–HORSE PORTÉE OPERATIONS.

In situations where a portée platoon has been brought forward to use its combat power to overcome resistance which has blocked scout car reconnaissance, the Bantam becomes a very desirable vehicle. The horse platoon leader who has accompanied the forward scout car platoon which has been stopped can use a Bantam for its personal reconnaissance and for transportation to the portée platoon detrucking area. Reconnaissance of difficult ground can be made very rapidly in the Bantam, so that there is no delay after the horses are unloaded. The leader can make his decision quickly and the horse platoon can immediately start for its objective.

Bantams from the scout car troop headquarters and the reserve scout car platoon can also help furnish security for the portée platoon which has been marching with the scout car troop headquarters. During halts, Bantams can augment flank security by patrolling the area to the flanks of the trailers. While the platoon is loading, scout cars block the entrance into the detrucking area, and Bantams cover the flanks of the trailers by movement cross-country.

Bantam acting as a point for platoon. It has just dived for cover off the road. Note the muzzle of a .30 caliber HMG mounted on the bantam

f. COUNTER-RECONNAISSANCE MISSIONS.

A scout car platoon given the mission of reconnoitering and delaying enemy reconnaissance elements in front of a stationary counter-reconnaissance screen can cover this area more effectively, if it has Bantams in addition to its scout cars. During the test, one platoon did particularly well on this type of mission, by covering the main routes with the scout cars, while the Bantams patrolled areas more difficult to reach in the scout cars. In this area, even horse patrols were unable to move without detection.

3. Platoon (or Section) In Delaying Action

a. GENERAL.

In delaying action, the methods employed by a scout car platoon depend largely upon the type of enemy opposition. Against motorized infantry and horse cavalry, the scout cars seek defiladed or covered positions affording good fields of fire at mid and long ranges. Against armored vehicles the scout cars seek defiles, stream crossings, and other bottlenecks which are blocked and denied to the enemy. In either type of delay, the Bantams can be of great assistance to the scout car platoon.

b. KEEPING CONTACT WITH THE ENEMY.

In delaying infantry, for example, where the scout cars delay with long range machine gun fire, the Bantams are valuable for keeping contact with the enemy during the withdrawal phase. During the test, a scout car platoon was delaying astride a road, all four scout cars in defiladed positions on a ridge. When forced to withdraw, the platoon leader displaced his platoon by section to the next delaying position. There was a good distance between the two delaying positions, with no suitable intermediate position. The Bantam, however with its low silhouette and exceptional cross-country ability, was able to keep contact with the enemy and observe his movements. Later it withdrew under cover to the scout car platoon. Thus, the platoon leader was able to keep contact with the enemy without unduly exposing his cars in poor firing positions devoid of suitable cover.

This action of the Bantam would be very valuable in close country with poor observation, where it would be difficult for the larger scout cars to keep contact between delaying positions without undue exposure.

c. BANTAMS AS GUN CARRIERS.

In delaying action, whether it is on high ground using long range fire, or whether it is at the routes across an obstacle, the Bantam can carry MG's for dismounted action into positions not readily accessible to the scout cars. These positions should be defiladed, or else afford a covered route of withdrawal for the Bantam.

On one occasion during the test, the scout car platoon was delaying at a stream crossing. The Bantam not only reconnoitered for possible enemy crossings, but also carried machine guns to a crossing so discovered, and denied the use of a ford to the enemy. In addition, .50 cal. MG's with ground mounts can be carried to nearby antitank positions.

d. SECURITY.

A scout car platoon, halted and firing during delaying action, either off the vehicles or with guns on the ground, must protect its flanks and rear from surprise attack. The Bantam can furnish this security very efficiently.

4. Dismounted Attack

When the platoon meets minor opposition and decides to attack dismounted, the Bantam can carry machine guns over difficult terrain to support the dismounted attack, while the scout cars attack by frontal fire. This action was successfully carried out several times during the test.

5. Bantam in Supply

It is believed that the Bantam will prove to be an invaluable aid in the field for reasons of supply. Many times on maneuvers, a scout car platoon has needed ammunition, gasoline, and rations, but has been unable or unwilling to send scout cars back to the Troop CP, or to the nearest DP, for resupply, since the scout cars were needed tactically. The Bantam under these circumstances may certainly prove to be a life-saver and save many a scout car platoon in a difficult situation.

CONCLUSIONS

1. Tests so far indicate that the motorcycle (solo) should remain in the scout car platoon as an essential member of the team. Where radio communication fails, or is not desirable, the solo messenger can carry information to the rear. This is his primary rôle, although he can be used as a scout. In addition, the solo is superior

Close up of bantam with .30 caliber LMG mounted. Crew of four—three M-1 rifles carried in boots

to the Bantam for traffic control. In an emergency when two solos are insufficient, the Bantam can perform messenger service. In situations where the messenger must pass through an area in enemy hands, it may be preferable to dispatch a Bantam with a message of vital importance, since the solo is so easily captured.

2. The Bantam is a very valuable addition to the scout car platoon and should be included in its permanent organization to take the place of the two solo intelligence scouts now provided. The remaining two solo motorcycles should be used for messenger service.

3. The Bantam to be used in this organization should be armed with a LMG (M 1919 A4), long barreled, mounted on a pedestal type mount. For this gun, 1,200 rounds of .30 cal. ammunition should be carried. The Bantam should be of the two wheel steer type and should be equipped with puncture proof tires. The four wheel steer type unnecessarily complicates an otherwise simple design; it is difficult to maintain; is dangerous to handle at speed; and is very easily knocked out of proper running order. No severe cross-country test of the four wheel steer Bantam was possible, since this type Bantam received here could be operated in only the high range of the transfer case, it being impossible to put the transfer case in low range.

4. The crew of the Bantam should be three men; a driver, a gunner, and a car commander, armed with the Thompson Sub MG.

OTHER TESTS

At present, the Sixth Cavalry is conducting a test of the Scout Car Platoon organized as follows: 4 Bantams; 2 Scout Cars; 2 Motorcycles (solo).

Later, the Regiment will test a platoon equipped entirely with Bantams. Of course, in these tests, the Bantam in order to substitute for the scout car, must be armed with the .50 cal. MG. Otherwise, it must give way to enemy light armored vehicles. It must also be radio equipped. All the advantages that accrue to the scout car because of its armor, of course, are absent in the Bantam. Advantages of cross-country mobility inherent in the Bantam are lacking in the scout car.

What Would You Do?

By W.W.Y.

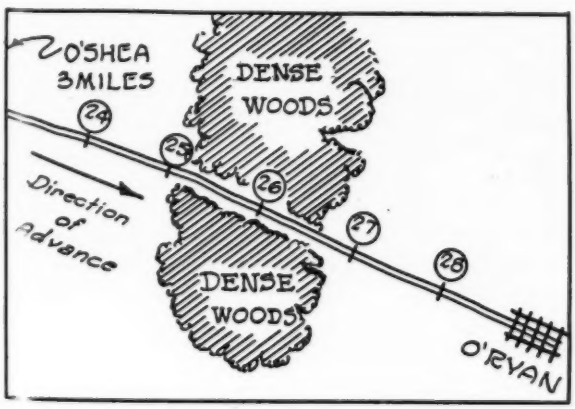
You are troop commander of a rifle troop which is part of a Corps Reconnaissance Regiment. Horse elements of the regiment are advancing generally to the east on a broad front, preceded by mechanized elements. Your troop has been ordered to act aggressively and by advancing from O'SHEA to seize the town of O'RYAN. The latter forms a point on a counterreconnaissance screen established by enemy forces. You have been warned by mechanized reconnaissance elements that hostile patrols are active and that you may expect these patrols to employ delaying action along the route of your advance. Your route of advance is equipped with mile posts as shown in the sketch by the circled numbers. The woods do not permit mounted maneuver, but the ground elsewhere is open and rolling.

You plan to move out at once in a formation which will permit you to employ immediate action against any delaying forces encountered. What type of forward security would you employ at various stages of the advance?

SOLUTION

A covering detachment should be used between O'SHEA and mile post 25 and again between mile post 27 and the objective.

Passing through the dense woods, which in effect constitute a defile, an advance guard should be employed.



The use of an advance guard in traversing the wooded area is an obvious solution since under such circumstances the command cannot be readily deployed to meet an emergency. Some force possessing combat strength (an advance guard) should be given the mission of brushing aside patrols or of containing hostile delaying groups thus protecting the main body until it can be deployed.

However, the initial employment of a covering detachment in this case is not so well understood. Many persons believe that covering detachments are not used except just prior to making contact with the enemy or upon nearing an objective; in other words when combat is "imminent."

This is generally true. But on many occasions when swift aggressive action is required, and delaying forces may be encountered, combat is always "imminent." Since an advance guard commander cannot usually tell whether an opposing group is of greater or smaller size than his own some reconnaissance of the hostile position must be made if an attack is warranted by the advance guard acting alone. This imposes the very delay the enemy seeks.

No commander should hesitate to employ the entire main body against a hostile delaying force regardless of the possible use of a "hammer to kill a fly." Such tactics effectively discourage hostile delaying forces.

If such use of the main force is contemplated and if the terrain permits the adoption of open "approach" formations only warning of enemy presence is needed. A covering detachment supplies all the security required and minimizes delay.

Thus, if delay is expected on maneuverable terrain, the use of a covering detachment at all stages of the advance is warranted. Where maneuver is restricted the greater protection of an advance guard is needed. The shift from one form to another is not difficult if practiced a few times in the field.

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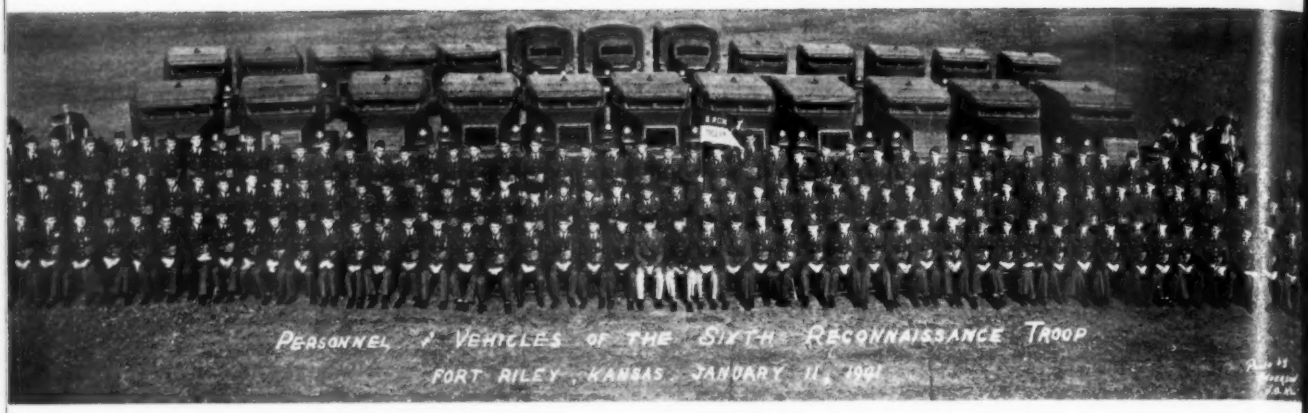
The opponent usually does not assume the rôle he has been expected to play.—*von Schlieffen.*



Initial March of the Sixth Reconnaissance Troop

By Major M. E. Jones, Cavalry

ABOUT the 20th of August, the first seven men recruited for the Sixth Reconnaissance Troop arrived at Fort Riley. It was September before others were recruited, and they continued to arrive during October, November and December.

Immediately upon arrival of recruits the troop commander personally supervised the fitting of their clothing, interviewed each individual and placed him in the radio school, arms school, clerks school, armorer's school or wherever the recruit seemed best fitted. This instruction was concurrent with recruit drill.

On January 18, upon completion of all schools and record firing, authority was granted to make a march to Fort Bliss, Texas and return, a distance of 2,000 miles. On January 20th, the troop, consisting of six officers, 154 enlisted men and 43 vehicles (1 Marmon-Herington, 2 Bantams, 12 motorcycles, 22 scout cars and 6 trucks) left Fort Riley at 4:00 A.M. and marched 286 miles to Fort Reno, Oklahoma, arriving there at 5:00 P.M., where they bivouacked for the night south of the polo field. This was a bitterly cold day and the going through Herrington and Marion, Kansas, was treacherous, due to the streets being covered with ice.

January 21st the troop proceeded to Amarillo, Texas, a distance of 218 miles, and, after supper, made a night march from Amarillo with only black-out lights to Roswell, New Mexico, a distance of 224 miles, where the troop rested until January 23rd. At Amarillo, a "norther" came up just two hours prior to departure, and the cold wind was most penetrating. One motorcyclist's muscles were so cramped from the cold he had to be lifted bodily from his machine. On January 23rd, the troop left Roswell at 7:00 A.M. and arrived at Fort Bliss, Texas at 3:00 P.M., a distance of 246 miles. Just outside of Fort Bliss one of the Lieutenants while turning on the reserve gas tank of his motorcycle, hit some sand, spilling him. He was badly bruised and was taken to the Army Hospital.

The troop spent January 24th and 25th in giving each vehicle a thousand mile check and left for Carlsbad on Sunday, where the men enjoyed a free trip through the famous Carlsbad Caverns.

Considerable rain was encountered on the return home, making, it most difficult for the inexperienced motorcyclists on the slippery asphalt roads. The troop, without the loss of a single vehicle, arrived back at Fort Riley the night of January 30th, where they thoroughly enjoyed their steam heated quarters and a delicious dinner.

This troop, although recently activated and composed of all three year enlisted men, recruited from Arkansas, Kansas and Iowa, boast the fact that it has seventy-four qualified radio operators, all holding diplomas from the Cavalry School. The men are new in the Army, but after this march, they know they can take it and are ready for any emergency.

There has never been a court-martial or venereal case contracted in this organization.

Unit Training Activities

1st Armored Regiment (L) Observes 108th Anniversary—Fort Knox, Kentucky

The 1st Armored Division paused in the midst of its busy training program Saturday to pay tribute to one of the most distinguished regiments in the U. S. Army.

The occasion was the 108th anniversary of the 1st Armored Regiment (Light) of the 1st Armored Division. The regiment is a light tank unit. Until its conversion into a tracked-vehicle regiment, the unit was the oldest horse cavalry outfit in the U. S. Army.

Colonel Alexander D. Surles, Commanding Officer of the Regiment, proclaimed a holiday for his men Saturday. Since the anniversary date falls on Sunday, March 2, Saturday was designated the day for observance of the Regimental Birthday.

Major General Bruce Magruder, commanding General of the 1st Armored Division, sent a letter of special greetings to the Regiment. The letter follows, in part:

". . . It is with particular pleasure that the 1st Armored Division on this date salutes the 1st Armored Regiment (Light) on the occasion of the Regiment's 108th Anniversary. It is a privilege, Colonel Surles, to pay tribute to your regiment.

"Deep rooted are the achievements of the First in the annals of American history. Activated by authority of Congress on March 2, 1833, as the 1st United States Cavalry, for service in the Black Hawk Indian Campaign, your Regiment was nurtured on the Indian frontiers and protected the pioneers as they broke the fertile soil of the West. The First served gallantly in the Mexican War and won equal renown in the Civil War, the Spanish-American conflict and the Philippine Insurrection. No less than 61 Battle Honors grace the First's Regimental Standard. Many famous military leaders are children of the First.

". . . On this date we pause to honor the distinguished First, a Regiment which has attained inspiring heights in the past. I am confident that the years to come will bring you continued honors and glory, and a satisfaction of duty well performed."

Two sergeants Saturday could look back on perhaps the longest period of service recorded by any men now in the Regiment. First Sergeant Earl C. Conley of Company F has served 19 of his 25 years in the Army with the First. Sergeant Frank Pray of A Company has a similar record.

* * *

Fifth Cavalry—Fort Bliss, Texas

COLONEL HENRY J. M. SMITH, *Commanding*

The training of the Regiment during the period January 1 to February 1, 1941 at Fort Clark, Texas was a progressive step beyond the instruction which was conducted during December, i.e., individual, squad and platoon training. Training schedules provided for the following:

(1) Troop tactical exercises.
(2) Combat firing.
(3) Overnight marches (one each month).
(4) Night exercises (one per month).
(5) Mounted scouting and patrolling.
(6) Preparatory work for mounted pistol practice for inexperienced men and animals.
(7) Correction of deficiencies at previous Training Test.
(8) Full pack inspections with all field equipment and Transportation.
(9) Dismounted close order drill 1:30-2:00 PM.
(10) Troop Officers' and Noncommissioned Officers' Schools.
(11) Instruction in the use of principal weapons.
(12) Road block problem (one per month for Scout Car, Platoon).
(13) Unit instructions for communication, Scout Car, Motorcycle and Transportation Platoon of Headquarters and Headquarters and Service Troop.

In addition to the above quoted training, the following schools were continued throughout the month of January:

Officers' Equitation Class.
Noncommissioned Officers' Equitation Class.
Motorcycle School.
Cooks' School.
Horseshoers' School.
Saddlers' School.

The scheduled training of the Fifth Cavalry was suspended as of February 1st in order for organizations to make necessary preparations for permanent change of station to Fort Bliss, Texas.

The motor elements of the Regiment moved from Fort Clark to Fort Bliss on February 4th and 5th with an overnight stop at Fort D. A. Russell, Marfa, Texas. Prior to the motor movement from Fort Clark, the motors from the 12th Cavalry joined with those of the remainder of the 1st Brigade. The movement was made in three serials, Brigade Headquarters and separate troop units—5th Cavalry—12th Cavalry.

The train movement from Fort Clark was made on February 5th and 6th in three serials. The first serial consisted of the Provisional Squadron with Medical Detachment and Headquarters Troop, 1st Cavalry Brigade attached; the second consisted of the 1st Squadron with attached Medical Detachment; and the third consisted of the 2nd Squadron with attached Medical De-

tachment and 1st Platoon, Troop "E," 16th Quartermaster Squadron.

A small detachment consisting of staff officers and selected enlisted personnel from each organization proceeded to Fort Bliss with the motors to arrange details of unloading the troops and horses when they arrived and to arrange details of supply.

The change of station from Fort Clark to Fort Bliss was effected without interruptions. The third serial of the train movement arrived at Fort Bliss at 1:00 P.M., on February 6th and by nightfall all details of the change of station were provided for.

The scheduled training of the Regiment was resumed on February 11th. On February 20th there was a practice Regimental "Alert" and on February 21st the entire 1st Cavalry Division was alerted in preparation for an emergency. The Troops were ready to march within an hour and fifteen minutes for the Regimental "Alert" and within one hour for the Division "Alert." Immediately following the Division "Alert" troops were moved into position on the parade field and passed in review. Brigadier General Innis P. Swift, United States Army, was Reviewing Officer and Brigadier General John Millikin, United States Army, was Commander of Troops.

The formation for the review was unusual in that the Regiments were formed in line of Troop Columns at two yard intervals and passed in review in that formation. Regiments adjusted their troop columns to provide a square formation.

On February 15th the Fifth Cavalry began receiving additional Selectees. Seventy-one Selectees were received on February 15th, thirty-five on February 21st, one hundred and two on February 26th, and sixteen on February 27th. The recruit training for these men began immediately after their arrival and is progressing satisfactorily. Approximately 20 per cent of Selectees received were either skilled or semi-skilled.

Organization Day

On March 3rd, as on similar dates for many years past, the Fifth Cavalry celebrated its Organization Day. All training was suspended for the day. The Organization Day exercises were held out-of-doors and consisted of selections by the Fifth Cavalry Band; addresses by the Regimental Commander; Brigadier General Innis P. Swift, U. S. Army, acting Division Commander, and Brigadier General John Millikin, U. S. Army, 1st Cavalry Brigade Commander. Master Sergeant Hans H. Bock, 5th Cavalry, the ranking Master Sergeant in the Division, read a prepared paper on the history of the Regiment. This was followed by presentation of the Colonel Scales Memorial by Lieutenant Colonel R. L. Creed, 5th Cavalry, to Headquarters and Service Troop for the coming year.

The exercises were followed by a Regimental Track Meet, which was won by Machine Gun Troop.

On the evening of Organization Day a dinner was held for the Officers and their families at the Post Officers' Club and a dance for the Enlisted Men at the Post Service Club.

Brigadier Innis P. Swift, Brigadier General John Millikin and Colonel H. J. M. Smith, the principal speakers at 5th Cavalry Organization Day exercises

New Devices

First Lieutenant Maurice E. Webb, 5th Cavalry, Regimental Motor Maintenance Officer, and members of the Transportation and Scout Car Platoons, Headquarters and Service Troop have developed three useful devices to be used in connection with motor elements. The first of these devices is a mount for the spare wheel on Scout Cars. Following are remarks and specifications on the mount.

To make up this proposed mount for the extra wheel on Scout Cars a piece of ½-inch boiler plate must be cut down to the same diameter of the wheel hub. Drill six holes through the plate to match the lug bolt holes on the wheel. Countersink the six holes on both sides of the plate and flush weld six short lug bolts in the holes, alternating the welding of the bolts as shown in Exhibits 1 and 2.

The disc is attached to the body of the Scout Car by drilling three holes through the armor plate and bolting the disc to the body. The wheel then bolts to the plate on the three alternating bolts.

The proposed location for mounting the spare wheel on the Scout Car is just in rear of the door on the right hand side as shown in Exhibit 3. This location will not interfere with the operation of the machine guns on the car or the door. The proposed location of the mount has one disadvantage in that it will unbalance the Scout Car but this can be corrected in the loading of the car.

The use of a brush guard is recommended in front

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of the spare wheel to keep brush from jamming between the wheel and the car.

* * *

The *second* of the devices is a carrier rack for the spare gasoline drums which must accompany the trucks in the field. Heretofore, the drums have been carried inside the truck where they take up much needed room.

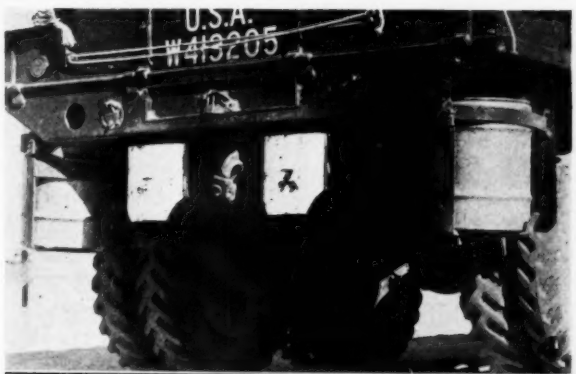
The idea for the carrier was developed from pictures furnished by the 6th Cavalry, however, several changes were made in the design, method of mounting, and method of holding the drum in the carrier. Following are specifications and remarks:

The drum is carried by brackets constructed of 5/16 x 2½-inch strap iron bolted to the splash guard and to the rear of the truck bed. The inside cross band is made of ⅛ x 2½-inch strap iron bolted to the splash guard and welded to the two upright brackets. The inside cross band is of the proper height to come just below the upper bead on the drum. (See Exhibit 4.) The outside cross band is hinged on the splash guard at one end and the opposite end is slotted, which allows the entire bracket to be locked. (See Exhibits 4, 5, and 6.) The outside cross band is just above the upper bead on the drum, which, when locked, holds the drum securely in place.

Since the pictured carrier racks were installed the vehicles have gone 5,000 miles without any repair or adjustment to the rack and they have been entirely satisfactory.

* * *

The *third* device developed is a machine gun mount to be used on the trains. This mount is on a 6′ x 6′ platform over the cab on a 6 x 6, 2½-Ton, Cargo Truck. It will allow the gun to be traversed 360 degrees and elevated from 15 degrees below horizontal to vertical position. By having the two holes along the upper edge of the cradle, either the light machine gun, heavy ma-



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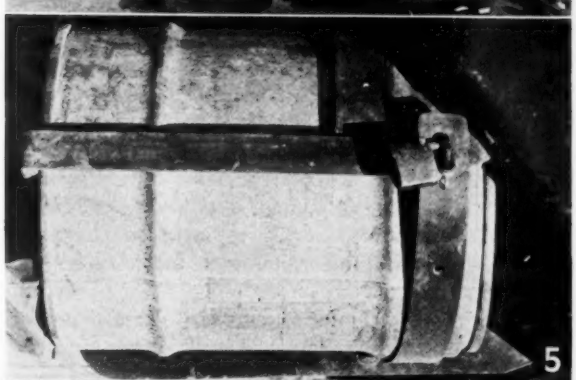
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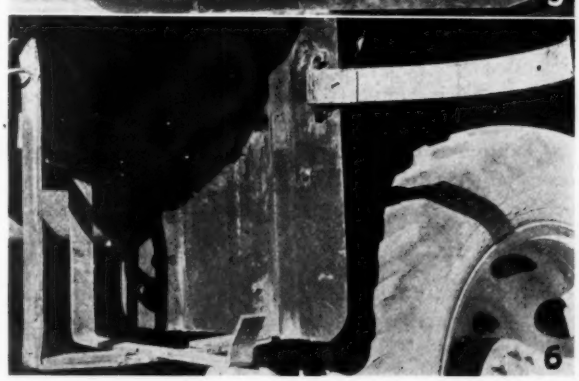
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Exhibit 7

chine gun, or caliber .50 machine gun can be mounted.

Following are specifications and remarks regarding the mount:

The cradle is constructed of two pieces of 5/16-inch flat stock. The two pieces of flat stock are separated 2½ inches and held in position by 5/16 x 2" flat stock spacers welded on the inside and the arm extended from the upright shaft. The arm is constructed of four pieces of flat stock welded in such a manner as to form a truss. (See Exhibit 7.)

An elevating device is attached at the rear of the cradle for minor changes in elevation. All locks can be loosened resulting in a free gun for antiaircraft fire.

9th Cavalry—Fort Riley, Kansas

LIEUTENANT COLONEL D. G. RICHART, *Commanding*

The 9th Cavalry began working at its new mission, that of a combat rather than a service regiment, during October, 1940. It is beginning its new task with much enthusiasm. The transformation being brought about by the new mission is highly noticeable even to those not familiar with the former duty of the regiment. There has been, and continues to be a marked uptrend in the morale of the troops; and mere knowledge of the fact that we are now a combat regiment has been sufficient incentive to many soldiers to become more particular and even meticulous about their brass and uniforms. It seems overnight the different troops have become imbued with a spirit of friendly rivalry to excel one another in all things pertaining to the military life, drills, athletic contests, marksmanship, military courtesy, hygiene, and other things that go to make a soldier.

Lieutenant Colonel Duncan G. Richart assumed command of the regiment on January 7, 1941, and, despite the many demands being made of the organization, we have been able to keep the training program progressing steadily.

Concurrently with the task of training its own men to give instructions to selective service men, the regiment has been confronted with the additional problems of furnishing cadres for the Cavalry School Detachment (Colored), the 76th Coast Artillery (AA), Fort Bragg, North Carolina, the 349th Field Artillery, Fort Sill, Oklahoma, the 52d Ordnance Company, Savannah Ordnance Depot, Proving Ground, Illinois, and the 40th Ordnance Company, Proving Ground, Aberdeen, Maryland. From present cadre requirements yet unfilled, it is estimated that there will be approximately 160 men left for duty upon completion of all requirements!

Sixty horses were received by the 9th Cavalry on January 2, 1941, from the Quartermaster Remount Depot, Fort Reno, Oklahoma. We were fortunate in receiving well-broken remounts, and began to use them two days after their arrival. These were the first horses that had been assigned actually to the 9th Cavalry in 18 years and marked the beginning of a very important new period in the history of the 9th Cavalry.

In addition to the six troops and Band constituting the 9th Cavalry troops, Special Weapons, C, and G Troops were activated on January 15, 1941, cadres being furnished by the older units. The cadre of Special Weapons Troop, due to the technical nature of their duties, consisted of men selected from the Machine Gun Troop.

In order to bring the regiment up to a number sufficient to put the training program into effect, the necessity has arisen for greatly increasing the strength of enlisted personnel, as well as officers. Therefore, 200 selectees were requisitioned on January 21, 1941. Inasmuch as 105—9th Cavalrymen are on SD with the Cavalry School Detachment, it will be necessary for the 9th Cavalry to train 160 men for duty with the Detachment in order that the men on special duty from the regiment may be relieved therefrom and recalled to the regiment.

10th Cavalry—Fort Riley, Kansas

LIEUTENANT COLONEL P. R. DAVISON, *Commanding*

Since the last issue of The CAVALRY JOURNAL the Tenth Cavalry has expanded to its war strength of nine troops and the whole regiment assembled at Fort Leavenworth. From a strength of five officers and 300 men in December, the regiment, including the troops from West Point and Fort Myer which joined us February first, has increased to sixty-three officers and 1,100 men.

Lieutenant Colonel W. H. W. Youngs, after commanding the regiment for two years, left January 28th for duty with the 5th Corps Area and Lieutenant Colonel Davison assumed command. When Lieutenant Colonel Youngs left the regiment, all the officers led by Lieutenant Colonel Davison and a platoon of scout cars manned by the old noncommissioned officers escorted him to the station.

On February 1st the regiment was formed in the

The Tenth Cavalry headed by Lieutenant Colonel Davison passing in review before the first Selectees received by the regiment on 8 March, 1941. Seventy-five per cent of the mounts are remounts with five weeks' training

Lower Riding Hall and the order activating troops "C" and "G" and Special Weapons Troop was read. The ceremony was concluded with brief addresses by Colonel Davison and General Gruber, the Post Commander.

The first regimental party in ten years, a dinner dance, was held at the Hunt Lodge on February 7th.

The regiment received 300 remounts February tenth and has been busy training and conditioning them so that they can be used by the 800 Selectees who were received between March 5th and 12th.

On March 8th a Regimental Review was held on the Grant Avenue polo field to welcome the new Selectees to the regiment.

On March 14th the Regiment entrained at Fort Leavenworth and arrived at Fort Riley to take their permanent station in new cantonment barracks in the Camp Funston Area.

The training for the next three months will follow the mobilization plans to train over 800 Selectees and to have them ready for field service.

* * *

12th Cavalry—Fort Bliss, Texas

COLONEL WILFRID M. BLUNT, *Commanding*

Instructions received from the War Department on January 15, 1941, directed the movement of the elements of the 12th Cavalry stationed at Fort Brown and Fort Ringgold to Fort Bliss, Texas, for permanent change of station, early in February.

The movement was ordered by rail and motor and was coördinated with the movement of the 56th Cavalry Brigade, Texas N.G., which was to take over the border stations.

The motor elements consisting of Headquarters and Service Troop under Captain C. J. Hoy, with a detachment from each of the other troops, constituted the advance detail. This column left Fort Brown on Sunday, February 2d, and was joined at Fort Ringgold by the Detachment Headquarters and Service Troop and small detachments from the other troops at that station. Vehicles were grouped in accordance with their normal employment and the march conducted as a tactical exercise which provided valuable training in reconnaissance and communications as well as in convoy work. This detachment arrived at Fort Bliss on February 5th where it took over a cantonment to prepare for the arrival of the regiment two days later.

The remainder of the regiment moved in three standard troop trains; two from Fort Brown, one under command of Major Robert Edwards and the other under command of Lieutenant Colonel Alexander B. Mac Nabb; and one from Fort Ringgold under command of Lieutenant Colonel Frederick R. Lafferty. Each train consisted of the necessary Tourist Pullman, Baggage, Kitchen, Stock, and Freight Cars to transport tactical units complete with men, horses, and equipment. In the shipment from Brown an experiment was tried of segregating mares from geldings. From the negligible number of injured animals it is believed that this was a worthwhile precaution. Another precaution against injuries was to have the stock cars placed in the train just behind the engine. However, this make-up precluded any heat in the Pullmans and as a severe norther blew up, the arrangement of some of the trains was changed en route.

Meals were cooked on the new type gasoline field stoves which were installed in the kitchen cars and proved thoroughly efficient. While the horses were somewhat drawn after two cold days of traveling, the trip proved a real holiday for the men. In this connection the railroad officials were very complimentary about the cleanliness of the Pullmans, the efficiency of the messing managements, and the behavior of the troops.

On February 7th the regiment was again reassembled permanently at Fort Bliss after having been separated for twenty years, and many changes have taken place since the first of the year.

Colonel Wilfrid M. Blunt took command on January 15th, relieving Colonel Arthur E. Wilbourn who

was detailed in the Inspection General's Department on January 10th. On arrival at Fort Bliss a new regimental staff was announced to replace the staffs brought from Forts Brown and Ringgold. The new appointments included: Lieutenant Colonel Eustis L. Hubbard, Executive Officer; Lieutenant Colonel Alex. B. Mac Nabb, S-1; Major Robert Edward, S-2; Major Henry L. Kinnison, S-3; Lieutenant Colonel Frank C. DeLangton, S-4; Lieutenant Guy H. Murphy, Personnel Adjutant; Lieutenant Colonel Callie H. Palmer, CO, 1st Squadron; Lieutenant Colonel Frederick R. Lafferty, CO, 2d Squadron; Major Clarence K. Darling, CO, Provisional Squadron.

After arrival at Fort Bliss, a few days were required to get settled in the new environment and to become accustomed to the luxuries of gas stoves in each tent, hot and cold showers, etc. However, with the receipt of 239 selectees and 200 remounts training is now in full swing.

While leaving its former stations was not easy, the regiment has received a warm welcome at Fort Bliss. On arrival the 7th Cavalry was host to the entire regiment for its first meal and a post reception was held to welcome the officers and their families. Many old friendships have been revived and the Rio Grande Valley is now but a pleasant memory.

Thirteenth Armored Regiment (L)—Fort Knox, Kentucky

COLONEL R. E. MCQUILLIN, *Commanding*

During the past weeks the regiment has been engaged in a variety of activities from a half-hour broadcast on March 15th, over Station WHAS, Louisville, Kentucky, to participation in numerous Brigade and Division problems and demonstrations.

Nine hundred and ninety selectees have been trained by the regiment and numerous details of instructors and equipment furnished the Armored Force Replacement Center, Division Officers' Training Center, and the Armored Force School. At the present time over 200 men are students at the Armored Force School.

On February 27th, a Regimental Parade was held in honor of Master Sergeant Frank N. Canning, Service Company, and First Sergeant George H. Loyd, Machine Gun Company, who retired February 28th, after completion of over 30 years service. Also on the evening of the 27th, a Retirement Party was held in the Post Gymnasium, honoring these noncommissioned officers. The Armored Force Commander, Major General Scott, the Brigade Commander, Brigadier General Baird and the Commanding General Armored Force Replacement Center, Brigadier General Heard were present and each made a short address.

In the near future the regiment will furnish personnel both commissioned and enlisted for the new 7th Armored Regiment of the 4th Armored Division to be organized at Pine Camp, New York. In addition, commissioned personnel will be sent to other armored divisions and enlisted personnel to the GHQ tank battalions. The necessity for rapid expansion has resulted in the promotion of numerous noncommissioned officers, and prospects are that the flow of promotions in the noncommissioned grades will be considerably accelerated in the next few months.

Prospective losses of experienced commissioned and enlisted personnel will be compensated in part by assignment to the regiment, during March and April, of approximately seventy officers and five hundred men who are now receiving basic instruction from other agencies. To absorb these replacements, and weld them into the regimental combat team, will constitute the primary training objective of the regiment until participation in the forthcoming corps and army maneuvers takes precedence.

102d Cavalry (H-M)—Fort Jackson, South Carolina

COLONEL DONALD W. MCGOWAN, *Commanding*

The 102d Cavalry (H-Mecz) was inducted into Federal Service on January 6, 1941, with a strength of 66 officers and 947 men.

Due to the illness of Colonel Henry L. Moeller, Colonel Donald W. McGowan, the Deputy Adjutant General of New Jersey was inducted as the Regimental Commander.

The regiment lost but one officer and 18 enlisted men for physical reasons upon induction. Arriving at Fort Jackson on January 16th, the Regiment was inspected by Major General Philip B. Peyton, Commanding the 1st Army Corps, on January 21st, and commenced its 13-week Mobilization Training Program the following day. Subsequently informal inspections were made by Lieutenant Colonel Charles H. Gerhardt, from G.H.Q., and Colonel Augustus F. Danneimiller, representing the Inspector General.

Range firing with the light and heavy machine guns and the M-1 rifle has been completed. In addition, the Mechanized Squadron fired a limited number of rounds with the Thompson Gun, and all personnel not having previously fired the .45 Calibre Pistol, fired an abbreviated instruction course.

Two hundred remounts have been received and in addition the full complement of scout cars and 41 Horse-Trailers.

As the Regiment completes its seventh week of training it chalks up the following accomplishments:

All remounts doing full duty.

Difficult driving course completed by all scout car drivers.

On April 1st, the Regiment expects to receive 450 selectees from New Jersey, to be shipped from Fort Dix.

All range firing completed except with the .50 Calibre Machine Gun.

Completion of a one-month S-2 school by 12 officers and N.C.O's.

Radio School in full operation with 125 students.

Cooks' and Bakers' Schools for eight students.

Evening Classes three nights per week for officers.

Colonel John Considine, Commanding the 6th Cavalry has arranged for a visit of all troop commanders to Fort Oglethorpe during the week of March 10th, and during the week of March 24th, regimental and squadron officers will visit the 6th for a week's training.

Troop A, 102d Cavalry was recognized following the World War on 9 Dec. '19, the regiment 29 April '21.

106th Cavalry (H-Mecz)—Camp Livingston, Louisiana

LIEUTENANT COLONEL CHARLES R. JOHNSON, JR., *Commanding*

The 106th Cavalry was inducted into Federal Service on November 25, 1940, at an authorized strength of 1,132 men. Headquarters and Service Troops were stationed at Urbana, Illinois, the First Squadron (horse) in Chicago, Illinois, and the Second Squadron (mechanized) in Springfield, Illinois. At this time 69 officers were inducted, an overstrength to be absorbed upon going to wartime tables. At the time of induction the permanent Regimental Commander, Colonel Kenneth Buchanan, was on duty in Washington with the GHQ for a protracted period. His induction had preceded that of the Regiment.

At the earnest request of the Regiment induction took place on schedule, even though the Regimental Camp in Louisiana was not entirely completed. Fourth Corps Area gave permission for the mechanized squadron to arrive in Louisiana on December 16, 1940, and other units subsequent to January 4, 1941. Elements started training in their home stations while waiting to move, being housed in the excellent Chicago armory, and the fine Urbana armory, with the Springfield squadron quartered in commodious 4H buildings at the Fair Grounds. All training facilities were excellent.

Headquarters Troop and the mechanized squadron, all under the command of Lieutenant Colonel Plaisted, marched from home stations on December 12, 1940, on a time schedule that had been prepared two weeks in advance. Every town and village appearing on highway maps was used as a check point and in no case was the column more than two minutes ahead of or behind its schedule at any one of these small villages. Commercial gasoline stoves, installed in trucks, permitted hot meals at the noon halts. The march was made with no AWOL's, no police cases, and no accidents. Overnight halts were made in armories made available through the courtesy of the Adjutants General of Illinois, Arkansas, and Mississippi. During the entire march it never stopped raining.

Service Troop and the unequipped motorcycle troop arrived by rail January 4, 1941, under the command of Captain Homfeld. On January 5, 1941, the horse squadron, commanded by Major Keehn, detrained at Camp Livingston.

Even though the camp was still under construction when we arrived, the men were extremely comfortable in their gas heated tents and modern mess halls. The construction people, working three eight-hour shifts, did everything in their power to be obliging, and the Regiment is deeply grateful to all, down to the lowest ranking pick and shovel man.

Three hundred extremely satisfactory remounts have been received from Front Royal and our thanks go to Lieutenant Colonel Pleas B. Rogers, of Front Royal. We now have all our scout cars, the bulk of our horse vans, but are woefully short on motorcycles. The tractors for the horse vans have not yet arrived.

Since induction, the Regiment has been authorized to go to 1,390 enlisted and 70 commissioned, and soon expects to go to an aggregate of 1,590.

Health of the Command has been excellent. We have had no epidemics, few injuries, and no G.O. 6 cases at all.

113th Cavalry (H-M)—Camp Bowie, Texas

COLONEL MAXWELL A. O'BRIEN, *Commanding*

The regiment arrived at its training area on January 25th, having left home stations on January 23d, following induction on January 13th. Four trains, arriving between 7:00 AM and 3:00 PM, were employed for the 47 officers, 925 enlisted men, 230 animals, baggage and impedimenta.

A motor convoy, comprising 45 vehicles, arrived on January 23d. Prior to this movement a reconnaissance of the route was made by the motor officer. As the vehicles were at their various home stations, an assembly point was designated for the morning of January 21st, in Osceola, Iowa, and the trip started from there.

An intensive thirteen-week training program was started on February 3d, and is believed to be progressing satisfactorily, although somewhat hampered by lack of equipment. On February 3d, 120 animals were received from Fort Reno. These animals were formerly in the hands of National Guard units, whose organization was changed. By and large, they are an excellent group of animals, containing some pack horses, which are very much needed in the regiment. Other partial receipts of equipment include: 52 Scout Cars, M3A1; 25 Trailers, animal and cargo, W/O truck-tractor; 2 Ambulances, field; and a few other smaller items.

Schools are being conducted daily and in the evenings, after mess, in Communications, Rifle and Pistol Marksmanship, Machine Guns. Weapon schools in the 36th Division are also attended, as are others including Intelligence, Chemical Warfare, and Motor Maintenance. Training films are being employed to the fullest extent.

Eight officers are attending the basic course at the Cavalry School, and will return to the regiment about March 10th. Five officers to the basic course, one to communications course, one to the motors course, and enlisted men to motors, communications, horseshoers, saddlers are detailed to attend the courses at the Cavalry School commencing March 17th. Fourteen cooks are in training in the Bakers' and Cooks' School, with an additional quota of seven more to go for courses starting March 15th and April 15th. Motorcyclists are to be sent to Indian Motorcycle Factory, Springfield, Massachusetts, for a training course.

A rainy period seriously hampered outside instruction, but not to an extent, but what a few days of sunshine will remedy.

All in the regiment feel that Camp Bowie and the maneuver area are well suited for an intensive year's training. Advance information to the effect that 450 recruits will arrive about March 13th, will find the regiment only 91 short in man power.

The regiment was organized July 4, 1915.

306th Cavalry—Baltimore, Maryland

COLONEL MATTHEW F. JAMES, *Commanding*

At the first conference in January the training film "Defense of Areas, and Dismounted Columns Against Attack Aviation" was shown. After this meeting the officers of the Baltimore units hoisted a few in farewell to Lieutenant Colonel Skinner and Lieutenant Jarman who left for active duty at the Cavalry Replacement Center at Fort Riley. The last unit conference of the Regiment in Baltimore was held on February 3d and was conducted by Major Warner, and was on "Defense Against Attack Aviation" and was followed by the movie "The New Infantry Drill." Group conferences attended by the remaining Baltimore officers were ones held by Colonel Bruce Palmer who lectured on "The Technique of Tanks."

308th Cavalry—Pittsburgh, Pennsylvania

CAPTAIN ROBERT C. WALLACE, *Commanding*

Army Extension School work continues at a high mark, with a steady flow both from the members of the Regiment on an inactive status, and a considerable number of the many officers now on extended active duty. In addition, eight new officers have been assigned recently to the Regiment.

While a large percentage of the officers maintaining mounts in the Regimental Stable have left for extended active duty, their horses are being taken over by others not yet called, or otherwise retained, and it is the intention to keep in existance this highly desirable facility as long as possible. Weekly rides have continued throughout the winter, and the mounted activities will be increased as the conditions of weather and footing improve.

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When one subdues men by force, they do not submit to him in heart but because not strong enough to resist. When one subdues men by virtue, they are pleased to the heart's core and sincerely submit.

—From *The Wisdom of the Chinese,* Mencius 374 B.C.

"Japan has modern weapons, China 4,000 years of history during which she has been conquered but never absorbed."

—From *China Fights for Her Life,* Ekins and Wright.

Foreign Reviews

General Wavell

*By Major General Sir Nevill Smyth, V.C., K.C.B., 1st A.I.F.**

GENERAL Sir Archibald Percival Wavell, Commander of the British and Australian Forces in the Near East, has had unrivalled experience both of the topography and of the human elements comprising the populations extending from the Caucasus to Ankara, the Levant States, Jordan, the Nile Valley and the oases of the Libyan Desert.

Several facts about him have been circulated in the Press; thus his father and grandfather each rose to the rank of major-general and he went to the South African War at the age of 19 as an officer in the Black Watch.

In 1928 he published a book on the Palestine campaigns and he has lectured more than once on strategical subjects. In December, five years ago, at the Royal United Service Institution, Whitehall, he discussed the essential qualifications for the Higher Commander, the modern conditions in which High Command has to be exercised and, that which is of particular interest to us, he suggested certain measures which could produce adequate commanders for war.

Two Types

He showed that there are two types of general—the one fitted for independent command; confident in his knowledge, his ability and delighting in responsibility; and the other excellent while serving under the orders of a superior, but apt to be at a loss when in sole command. The first is often a difficult subordinate and may even border on the rebellious.

Generals with great peace reputations often fail in war. All material of war, including the General must have a certain solidity, a high margin over the normal breaking strain. A robust physique and robust mind are the first essentials.

He quoted Xenophon, who was born about 440 B.C., and shows that the same qualities were required in a General then as at the present day.

Physical courage we are apt to take for granted as the Duke of Wellington did for all British officers, and although it is not as essential as in the days of close range fighting he says, "I do not see how any General can properly exercise command without constantly risking his life to make personal reconnaissance both from the ground and in the air."

Moral Attributes

Next to physical qualities come moral attributes; the fighting spirit. The man who in a game plays best when the result hangs in the balance has a value which the modern highbrow defines as a superiority complex. To this must be added loyalty, straightness, simplicity. He must know what he wants and that must be victory.

Then as to his mental make-up: Military learning must be based on a solid foundation of common sense, imaginative common sense or foresight and a knowledge of what is and what is not practicable. It sounds rather obvious, but is indispensable.

General Wavell wisely advises that in dealing with soldiers of other nationalities, unless he has a gift that way the officer had better not try to talk their language, but the more general knowledge he has of their characteristics and point of view the better.

I remember the late Sir Henry Wilson on being told that a person spoke six languages remarked "you mean he can make a fool of himself in six languages."

There is one thing about the Arabic language that it is well to remember: There are so many accepted dialects of it that it is better if one cannot hold forth in the highest idiom to converse in rough Arabic, for thus one at once gains the confidence of Arabs or educated Moslems the world over who very often do not quite trust an interpreter.

But to return to General Wavell and his view of the war of today.

On the ground the commander will have to handle forces moving at a speed and ranging at a distance far exceeding that of the most mobile cavalry of the past. A study of naval strategy and tactics, as well as those of cavalry, will be essential to him. Needless to say he must be able to handle air forces with the same knowledge as forces on land.

It seems immaterial whether he is a soldier who has really studied the air or an airman who has really studied land forces; it is the combination of the two—never the action of one alone—that will bring success.

Then he says: "No one should hold the rank of Higher Commander without having had at least six months really close association with the Air Force within a few years of his promotion."

*From *Reveille*, Australia.

The reader will observe that these proposals mostly apply to peace training and they reveal a disposition to escape from the routine centralization of the War Office which has resulted in a definite weakening in the Higher Commander link in the chain of command.

"I think," said he, "that the Staff College looms rather too much in the opinion of the ordinary regimental officer as the only possible way of reaching higher rank, and that an officer who has not passed through the Staff College is inclined to consider that the prospects of higher rank in his military career are more or less at an end. I think that this is not and should not be true, and that it is not a good thing for the Army that many should so regard it. (War has closed the college.) N.C.O's do the work of junior officers to a very large extent; it is right that they should do so and they should be so trained with the view of being promoted to commissions in war."

Perhaps the reader may think some of these views unorthodox and demanding the impossible, but I feel confident that all will agree that General Wavell's opinions disclose the true soldier spirit of a leader who can be relied upon to lead, to act, to execute and to achieve.

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German Horse Cavalry*

"The splendid achievements of German armament did not only apply to the motorized and mechanized units of the *Fast Troops*, but also to the mounted ones–*the horse cavalry*. At the beginning and during the course of the World War, the German Cavalry lacked the armament and equipment to enable it to break through and penetrate hostile resistance. This defect has been remedied today. A propaganda-company report throws some light on the pursuit operations of the German cavalry division after the occupation of Paris. In spite of strong enemy resistance on the Seine and Loire and at Samur, this cavalry division was able to travel 70 and even 100 kilometers (44-73 miles) daily. Hence this division was able to beat the retreating enemy to the critical river crossings, thus permitting the rapid and uninterrupted advance of the following army troops. That the modern German cavalry is even equipped for the defense against a modern offensive enemy, is proved by one of the army communiqués which states that a cavalry division destroyed 34 out of 40 attacking tanks."

*From *Deutschewehr*, August 23, 1940.

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Horse in German War Operations*

Have present conditions changed much in comparison with those existing during the World War 1914-1915? This question may be answered with "No." On the fixed Western front the addition of Cavalry was neither necessary nor possible during the second phase of the World War. Then, a Cavalry attack in front of Verdun and on the Marne would have been as suicidal as an attack of the Siegfreid or Maginot Line. Entirely different are conditions on other fronts. Terrain and road conditions in the Balkans and in Eastern Europe remain the same today as they were 25 years ago. The few auto roads, constructed since then, do not alter the picture to any great extent. With light battle forces such roadways "avenues" have no significance anyway. Whoever, as a member of the larger forces, took part in pursuit of the enemy over a Serbian or Rumanian Road –mountain trails need not be considered–he knows, that for man, cannon, munition, and provision there is but one transportation that never fails–the horse. Whenever draft or motorized baggage or ammunition wagons, whenever field kitchens mire or encounter impassable obstacles such as wrecked bridges, landslides, and the like it is always and only the horse or mule which alone can save the situation.

The corollary is clear: Not only Cavalry, but all troops whose mobility depends upon the horse, must have efficient riders, grooms, and drivers. The field or mountain Artillerist must be able to manage his horse as well as the Cavalryman. The tasks that fall to the lot of each in battle are frequently the same. Only in the most exceptional cases will the Mountain Artillery have any Cavalry detachments for purposes of reconnaissance or inter-communication. Too much attention can never be bestowed upon the systematic development of horsemen and mule skinners. Unfortunately Mountain Artillery quite frequently resorts to unwelcomed belittling of pack leaders by assigning deficient cannoniers to the latter. Good, reliable, and experienced animal leaders are as essential for the wartime

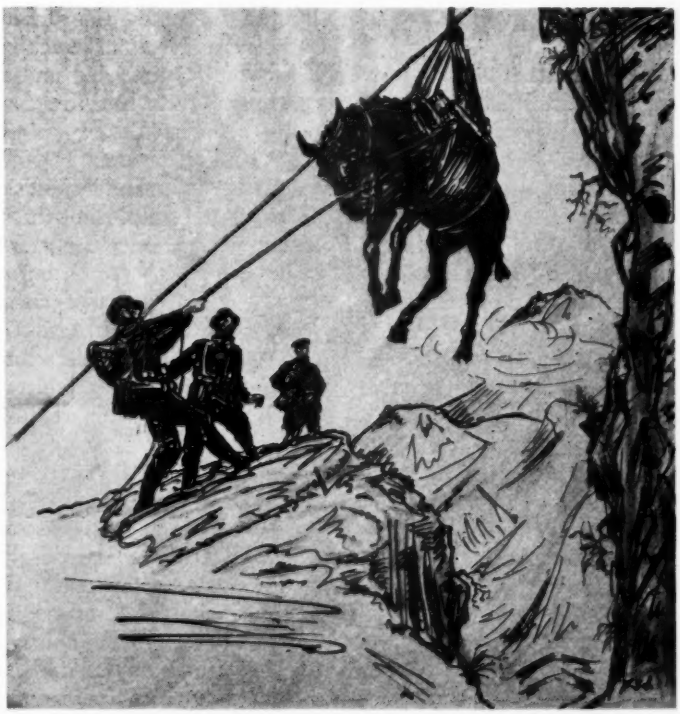
*From *Deutsche Kavallerie-Zeitung*.

efficiency of a battery as trustworthy cannoniers. A good groom is usually also a good animal leader. The latter must know his animal fully as well as a rider does his mount. What appears easy during peace time maneuvers may turn out to be a disastrous effort in actual warfare.

As example, we may serve an advance under enemy fire on a road that can be in view of an enemy observer. In most such cases, with guns taken apart, or with machine guns and ammunition stowed on pack animals, the advance is made at irregular intervals on the right and left of the road where ditches may afford some shelter, in order to reach a spot from which an effective bombardment of the enemy's position is possible. Here the animals follow each other in trace but at considerable distances. The pack leaders are then wholly on their own; they must be men absolutely dependable, trained to perfection, and thoroughly familiar with the peculiarities of their leads in order not to lose control over the mule or horse in such critical situations. And yet more hazardous is a like undertaking whenever, in the higher mountain reaches, cliffs have to be passed which happen to be under the enemy's eyes. Similar incidents cannot always be avoided.

Manifold are the tasks demanded from horse or mule during wartime operations—the same applies to the soldiers. Even in countries like Belgium or England where Cavalry in toto, or nearly so, has been hurriedly motorized, a shortage of horses exists. It is an indication that the motto for all countries must be "horse and motor." Legion is the number of Artillery positions to which ammunition can be brought only by the horse, draft or pack. During the World War it was shown that in the Dolomites with its magnificent highways, the final climb (Etappe) for maintenance of the troops in the very first line of battle was possible only with the help of the horse or mule. During rainy seasons in the Balkans, on their sloppy, deep, and squashy roads, every motorized column is brought to a standstill. Everywhere, where natural obstacles in mountain form are met, motorized troops will encounter limitations, which in many instances are appreciated only in emergencies. For the difference is great whether unimproved roads are passed over for days and weeks by masses of varied troops than when the same roads are used only now and then by some column. One column of mounted troops or pack animals will damage a road less than a horse drawn or motorized train of vehicles.

For the time being, both horse and Cavalry will remain an important, indispensable factor in the defense of all countries, that find it expedient, or are compelled, to resort to field operations or to war movements over roadless or mountainous regions.



"THE GREEKS HAD A WORD FOR IT"

Flame-Throwers and Their Uses

ALMOST startling weapon developed in the World War was the flame-thrower. This special tool of modern warfare was not looked upon then by all armies with equal favor. However, its reappearance on a considerable scale in the present war makes it again an object of much interest to all combat troops. The basis of the following discussion is an article which appeared in a recent number of the Swiss magazine, *Allgemeine Schweizerische Militärzeitung:*

The earliest studies dealing with the construction of flame-throwers date from early in the present century. The German Army made the first experiment with the flame-thrower and by 1914 had actually constructed some of them. During the first month of the first World War, the flame-throwers were tried out to determine the best ways of using them. The first assault with these weapons was at Malancourt, on the Western Front, on February 25, 1915. The limited successes gained in these attacks were insufficient to impel the Allies to build similar weapons.

All flame-throwers have the same basic principle. They consist of two containers, one holding the oil—a mixture of tar residues, hydrocarbons, creosote and carbosulphide—and a second container, connected with the first by a valve, which holds compressed gas, preferably nitrogen. This gas, of course, is the propelling agent. When the valve is opened the gas forces the oil through a pipe, and as it comes out of the nozzle the oil is ignited by means of a fuze or pilot light.

The range of a flame-thrower depends upon two things: First, the amount of pressure exerted by the propelling gas. This must not exceed a certain limit, so that the oil stream will not scatter. Second, the thickness of the stream of flaming oil. This has to vary with the duration of the assault, since oil consumption naturally rises with the increase in diameter of the oil stream. Thus range and duration of fire depend also upon the weight of the equipment and oil that has to be carried along.

Two main types were used during the World War: fixed and portable. The following table shows the development of flame-throwers:

Type	Range (ft.)	Oil (gals.)	Duration of fire (sec.)	Weight (lbs.)	Remarks
1. Fixed					
Hersent Thiriont (French)	100-260	131	20	4,000	Stream could not be interrupted.
Schilt 1 (French)	80-100	21	20-25	275[1]	Coupling several flame-throwers produced a range of 130-200 feet. Duration of fire 20 seconds.
Schilt 1-bis	80-100	14	20-25	190[1]	
Schilt 2	80-100	8	20-25	155[1]	
Grof (German)	115-130	26	40	165[1]	
2. Portable					
Wex	80	3	20	22[1]	Approx. 18 bursts.
Schilt 3-bis	80	3	25-30	66[1]	Approx. 28 bursts.
Schilt p3	80	3	25-30	53[1]	Approx. 28 bursts.
Schilt p4	80	2 6	20	42[1]	Approx. 15 bursts.

[1]Empty.

Fixed types of flame-throwers are not in use today, but data on their construction can probably be applied to flame-throwers built in tanks. These modern types have a range of over 300 feet and can deliver from fifty to a hundred bursts, with a total duration of fire from one to three minutes. Italy has for a number of years armed her tanks with flame-throwers, and the German Army used them with great surprise effect in the Battle of Flanders.

No doubt, also, the construction of portable flame-throwers has been greatly improved, especially through using light materials. These now have ranges up to 115 feet, and a duration of fire between thirty and forty seconds with as many bursts.

The stream of fire from a flame-thrower acts primarily through the flaming oil itself but the effective heat radiates out to approximately three times the diameter of the stream of oil. Flame-thrower personnel has to be protected by asbestos cloaks. The oil stream acts further through its poisonous combustion gases, especially when it is directed into closed spaces, like dugouts and pillboxes. As the stream strikes a surface the incomplete combustion creates carbon-monoxide.

At the point of impact, the effect of the oil stream is immediate and complete. But the moral effect is even greater than the material effect. This is definitely proven by the number of prisoners taken in flame-thrower operations. On June 1, 1916, the German 66th Infantry launched an attack in the woods of Caillette, near Verdun, preceded and strongly supported by a company which had five fixed and twelve portable flame-throwers. Besides gaining considerable ground, the regiment captured 1,900 prisoners, including two regimental commanders and sixty other officers.

In fighting tanks, flame-thrower crews aim the stream of fire at slits and other apertures. The oil that gets inside the tank keeps on burning, of course, and may ignite anything that will burn. In any case, the inside temperature of the tank will usually rise at once when burning oil enters any aperture. And, when a tank is enveloped in flames, the air used by the motor is deprived of oxygen, which reduces the speed of the tank or stops it entirely.

During the first World War fixed flame-throwers were employed for offensive action in position warfare, where the opponents faced each other at close range. The fixed types served to put the enemy in the advanced trenches out of action and to deliver fire concentrations with surprise effect, thus preparing for a penetration of the hostile front lines. This type of equipment is of no avail in combat of the kinds so far engaged in in the present war. In fact, no mention has been made of the employment of fixed flame-throwers. Fixed flame-throwers might be used effectively in the defensive to

cover small sectors, except that their effect is of such limited duration. In certain circumstances fixed equipment might play a rôle in short-range defense of fortifications.

Portable flame-throwers form part of the armament of assault units. Flame-thrower units, protected by the supporting fires of all weapons and taking full advantage of all cover, close in on hostile strong points and pillboxes. Resistance encountered in closing on these objectives is overcome with hand grenades and automatic rifles. If a flame-thrower operator finds he cannot approach within range of his target, he delivers a burst and then pushes on to effective range under cover of the smoke screen he thus creates. It may be best to blast the objective before committing the flame-throwers to action. Then again, the demolition may be carried out with flame-throwers in support. Their function then is to wipe out or neutralize close resistance, or with their smoke screen prevent the enemy from observing the advancing demolition party.

Flame-throwers are also useful in street fighting, where they are used to smoke out cellars and buildings at ranges too long for accurate aim with hand grenades at windows or doors. Flame-throwers will also cause local fires, thus spreading confusion among the enemy.

In the offensive, the flame-thrower is not so much a weapon of favorable chance as one that should be given a definite job after careful reconnaissance. The flame-thrower as such cannot be used to insure continuity of an attack within a given zone, excepting when it is possible to accompany the assault troops with enough flame-throwers to take care of all the separate tasks. How many would be needed can only be determined when the hostile situation is clear. Besides supporting certain individual actions, the primary employment of flame-throwers seems to consist in leading the assault troops, at the moment the support of the rear echelons ceases, that moral superiority essential to penetrating a strong position and continuing the attack on through it. In the present war, flame-throwers play a vital rôle in assaults directed at pillboxes and are used against them jointly with other weapons of offensive fire power.

In warding off a counter-attack, flame-throwers are used in defensive action at close range. On the other hand, they are rarely committed to action at the outset of a defensive action.

No information has been published concerning the tactical employment of flame-throwing tanks. They may be used against pillboxes where there is an accessible approach and also for antitank defense.

As for measures against foot troops, there is no individual protection against the stream of flaming oil. It should, however, be feasible to provide collective protection for pillboxes. Without discounting the actual effect, it must be brought home to the troops that the success of the flame-thrower depends mainly upon its moral effect. Any man who does not lie within the radius of the oil stream must accordingly direct his fire immediately against the flame-thrower. That is the best method of defense. For the operator of the flame-thrower makes a sizable target at close range, and the duration of effect of the flame-thrower is short. Once the moment of extreme moral strain is overcome, the success of the flame-thrower reduces itself to the actual material effect, and the attack of the hostile assault troops loses much of its momentum.

Book Reviews

AMERICA AND TOTAL WAR. By Fletcher Pratt. Smith and Durrell, New York, 1941. 318 Pages; Illustrated; Complete Index; $3.00. (Publication Date, March 21, 1941.)

This is the most expert unofficial appraisal of this timely subject that has come to our attention. In view of Mr. Pratt's numerous books, articles in our service journals, and recent commentaries in the *Saturday Evening Post, Time* Magazine, and the *New York Post,* the author has earned the distinction of being one of the better known commentators on the profession of arms.

While Mr. Pratt's complete analytical exposition is of intense professional interest and is comprehensive in scope, the following passage will interest cavalrymen:

"Which brings up the other great peculiarity of our military geography—the relatively heavy afforestation, accompanied by an infrequency of roads, which North and South America share. Both point in the same direction as the gables of the wooden house, the American individualism and trend toward marksmanship—toward rifle and pistol as the potent primary weapons for an army fighting under American conditions. Not that machine guns, mortars and howitzers should be neglected; but the organization that arms every man with a pistol, regardless of whether he is serving a mortar or not, is a good one to stick to. In wooded country there is no force quite equal to a group of intelligent small-arms men.

"Or no force but one. The tactical problem of any form of war may be stated as that of bringing weapons to bear on the enemy and keeping them supplied with ammunition. In open Europe the wheel, whether harnessed behind an animal or a gasoline motor, is the best method of accomplishing this result. But all wheeled vehicles are at disadvantage in country even lightly forested; and this is particularly true in America, with its incomplete road net. Woods drive wheeled traffic to the roads, canalize it, subject it to punitive aerial attack.

"But traffic on horseback can seep through woods at a rate even faster than on foot, and woods offer cover that take away the chief objection to cavalry in modern war—vulnerability. In the Finnish war and in the early stages of the Italo-Greek campaign many of the axioms of mechanical war turned sour—and the terrain of both countries is not too different from that of the eastern and western coasts of the United States, with the exception of a few spots of flatland like New Jersey. In such country the bombing airplane proved notably ineffective against combatants hidden under trees. Artillery only pulled its weight when it was light pack artillery that could be manhandled or carried on animal back. Even the all conquering machine gun was less useful than the rifle; and cavalry was of the very greatest use when it could forget the tradition of glitter and treat the horse as a mere instrument of transportation for men and weapons."

Mr. Pratt is not an alarmist, yet his dispassionate survey of our existing defenses makes one keenly aware of the necessity for swift and united action. There are no neutrals in total war.

AMERICA CAN WIN. By Major Malcolm Wheeler-Nicholson. The Macmillan Company, New York, 1941. 246 Pages. $1.75.

The fluent pen of Major Wheeler-Nicholson gives us another book. This one is in strange contrast with his recent *Battle Shield of the Republic.* Perhaps, in the interim, the author has discovered that much of his *Battle Shield of the Republic* was factually inaccurate; and that his statements, "These basic faults would make it difficult for the United States Army to win a war against a first-class military power," and, "The Army is still unable to supply officers who can be depended upon to lead troops capably in battle," etc., *are not true!*

With a release date of March 25, 1941, Major Wheeler-Nicholson reassuringly, but with apparent haste, writes that *America CAN win.* We can be assured also that his obvious plans for the immediate utilization of our military strength as outlined in his XIV Chapter, have already received meticulous and intelligent consideration by our War Department. His remaining chapters, for the most part, comprise a recapitulation of what has previously appeared in public print, culminating in his concluding virile paragraphs as follows:

"Let us stop deluding ourselves with catchwords.

"Until we drop, once and for all, that craven catchword, 'aid short of war,' we are unworthy of the freedom we possess. Unless we take our place as men, ready to fight again for the freedom for which our forefathers fought, we shall inevitably—and deservedly—drop back into the gray limbo of slavery.

"Unless we face the facts quickly and take action, it will be too late. Those facts are evident to anyone who reasons clearly.

"We cannot defend our nation and our hemisphere for several years to come without Britain. Britain cannot win against the overwhelming forces against her without adequate aid from us. Our aid is not and will not be adequate in time.

"There is no aid to Britain short of war.

"There remains only war.

"The question for us to decide is whether we shall fight now with everything in our favor, or whether we shall delay, dawdle, and waste time in idle talk until we are forced into battle at the time when conditions are worst for us. There is no question of war or peace.

"America MUST FIGHT."

* * *

AMERICAN RACE HORSES, 1940. By John Hervey. The Sagamore Press, New York. 255 Pages; Profusely Illustrated; $6.00.

American Race Horses, extremely informative and splendidly produced, has been proclaimed by the best informed horsemen of the world as the outstanding book on this fascinating subject. The photographs of each horse reviewed, with his or her five-cross pedigrees, are alone worth many times the price of the book.

American Race Horses is of vital concern, not only to racing men and women, but as well to cavalrymen and all who love horses—to those interested in steeplechasers, hunters, polo ponies, and saddle horses—for the thoroughbred appears across the entire horse horizon.

OFFICERS' MANUAL. By Colonel James A. Moss, U. S. Army (Retired). George Banta Publishing Company, Menosha, Wis., 1941. 384 Pages; $2.50.

For the older officers of our army this 1941 Revised Edition of *Moss's Manual* needs no introduction.

The following foreword by Major General H. H. Arnold briefly sums up the advantages of having this book in one's military library.

"*Moss's Manual* has filled a unique and urgent need in the field of military information in the United States for a generation, the more so because it is the kind of book which could not be produced as an official publication. Its unique values rests on its concern with customs and traditions which, if published officially, would cease to be customs and traditions and would constitute a code of conduct prescribed by regulations. Actions which have their roots in customs of traditions are above and beyond legislative or regulatory requirements and mark the individual taking them as one who has grasped the spirit as well as the letter of the tenets of his profession.

"In this revision of *Moss's Manual* the author has succeeded in perpetuating the most valuable of our older unwritten laws, and added some of more recent growth. The younger officers in the Army today will serve themselves and their Country better if they are familiar with the traditions that have guided their illustrious predecessors in the American military service."

ONE HUNDRED YEARS WITH THE SECOND CAVALRY. By Major (now Lieutenant Colonel) Joseph I. Lambert, Cavalry. The Capper Printing Co., Inc., 1939. 441 Pages. Bibliography and amply illustrated. $2.50 (at Headquarters, 2nd Cavalry, Fort Riley, Kansas).

Through over a century of gallant service, Indians of the north, east, south and west, Mexicans, Confederates, Spaniards in Cuba, Filipinos, and Germans "Over There" learned to respect the 2nd Cavalry, which now is stationed at Fort Riley, Kansas.

Colonel Lambert deserves great credit for his painstaking and thorough treatment of this volume. There are numerous informative and instructive episodes. Of particular interest is his description in Chapter V of the Fort Fetterman Massacre, which should be better known than it is.

Every Cavalry Dayroom and professional library should have a copy of this history of the 2nd Cavalry.

THESE MEN. By Maurice J. Swetland, Lilli Swetland, co-author. Military Service Publishing Company, 1940. 312 Pages; $2.50.

"For conspicuous bravery above and beyond the call of duty. . . ."

This is a fast-running story . . . a mosaic of several hundred individuals whose actions are recorded . . . touching the highspots of World War I, when America turned the tide and ended the gigantic struggle.

This story is also human. Men live and die in mud and blood-stenched trenches. In the individual action of *These Men* however, we find something glorious and inspiring in their daring and valor, honor and self-sacrifice.

CAPITÁN. By Lucy Merndon Crockett. Henry Holt and Company, 1940. 354 Pages; $2.00.

Capitán is the story of an army mule, fascinatingly illustrated by the author. Miss Crockett is an army girl, the daughter of Colonel Cary I. Crockett, Retired.

This unique, human interest story is written in the style of an autobiography, and as *Capitán* unfolds the chapters of his army career, there are numerous incidents which impel heart throbs and again, merriment. It is a story behind a story, since it has an authentic historical background that carries the reader through campaigns in Cuba, China, the Philippines, Mexico and even France. Rich in detail, it is a mule's-eye picture of the army and of the men in it who have fought for America.

There is something homely, gallant and appealing about *Capitán* that makes one wonder if after all he wasn't something of a hero.

WHAT THE CITIZEN SHOULD KNOW ABOUT THE ARMY. By Lieutenant Harvey S. Ford, FA. W. W. Norton Company, 1941. 223 Pages; index; $2.00.

Many times has this reviewer, interrogated by relatives or other civilians, wished that he were able to recommend to them some one volume which would give them the concise, authoritative, uptodate data about the Army which they wished. Lieutenant Ford's new book fills the bill admirably. The army man can now present to his civilian friends a copy of this book, and tell them that it contains the desired information, briefly and accurately expressed, and understandable to the average layman.

Lieutenant Ford, who has specialized in military research for a number of years, is now assistant editor of *The Field Artillery Journal*. Being stationed in Washington, having full access to information available in the War Department and being able to have his work reviewed by official sources, he was able to produce a volume which can be considered reliable in every way. The army officer and the enlisted man, as well as the civilian, will welcome this book, since it provides a compilation of many facts concerning which the average military man is imperfectly informed, or cannot easily obtain. Persons who have recently entered the military service will discover that it provides them with an excellent general orientation.

The author is to be congratulated, also, on the clear method of exposition. —W. S. N.

THE FLEET TODAY. By Kendall Banning. Funk and Wagnalls Company, New York and London, 1940. 346 Pages; $2.50.

We remember *West Point Today* and *Annapolis Today*. *The Fleet Today* is another of the author's excellently written and highly informative books for the layman. Beginning with the moment the young applicant enters the Recruiting Office, the reader follows his career step by step as an apprentice seaman during his basic training, through the service schools where he learns a trade and becomes expert in the technique of handling the modern instruments of war. We see him aboard the warships; his work, his play, his adventures, and his perils described in an easy-to-read style—exciting and dramatic pictures of little-known phases of Navy life.

Included in this book is a complete, uptodate list of every fighting ship in commission, building, or authorized.

Horse Feathers

Bantam Enthusiast

LIEUTENANT: "It runs so smoothly you can't feel it; so quietly, you can't hear it; has such perfect ignition, you can't smell it, and for speed—Sergeant, you can't even see it!"

SERGEANT: "Gosh, Sir, then how do you know the darn thing is there?"

* * *

The following rhyme accompanied a present to a horse cavalryman on his birthday. The present, of course, was a small toy horse.

In this day of mechanization
With the horse in jeopardization
And the fear of your stagnation
In the event of mobilization
Without a horse,

I have felt the inclination
And yielded to temptation
And have tried to save the nation
And the hope of civilization
With a horse.

The horseman's jaunty comeback:

Your wits in mobilization
Have conceived a jeopardization
For the horse (and my stagnation)
That's the bunk!

I fear no inclination
To swap the horse for mechanization
If we yield to that temptation
Then We're sunk!

* * *

The less we use our heads, the more we must use our hands and feet.

* * *

TRAINEE: "What does O.I.C. mean?"
CORPORAL: "Officer-in-Charge."
TRAINEE: "Oh, I see!"

* * *

You can lead a cavalryman to water—but why?

* * *

TRAINEE: "Gosh, that looks like a dray horse."
INSTRUCTOR: "Well, it's a white horse; and you cut out that baby talk."

FIRST SERGEANT: "This troop reminds me of Kaffee Hag—99 per cent of the active element has been removed from the bean."

* * *

Generally, when a trooper has a "buck" in his pants, the ants are not far away.

* * *

COLONEL: "Son, do you know what little boys who swear, become when they grow up?"
SON: "Yes, Sir—Cavalrymen!"

* * *

CAVALRY TRAINEE I: "Who yer shovin'?"
CAVALRY TRAINEE II: "Don' no: what's yer name?"

* * *

Provost Sergeant says, "Where there's a *chip on the shoulder*, there's usually *wood* above."

* * *

SERGEANT INSTRUCTOR: "Now when you troopers are on reconnaissance DON'T be like Columbus! When HE started out he didn't know where he was going; when he got there, he didn't know where he was at; and when he got home, he didn't know where he had been. Savvy?"

* * *

Recruit: When the cavalry commands FORWARD, why do they drawl, Haow-o-o?
Corporal: What we mean is, FORWARD, *AND HOW!*

War Department Changes

Cavalry Personnel

(From January 19, 1941 to March 15, 1941)

Captain S. F. Abrahms relieved detail in Q. M. C. Feb. 28, and assignment as asst. to constr. Q. M., Camp. Jos. T. Robinson; assigned 1st Armd. Div., Fort Knox.

Lieutenant M. W. Adams, relieved present duty, assigned Cav. School, Fort Riley, Kans.

Major C. P. Amazeen relieved 2d Cav. Div., Fort Riley; assigned 2d Armd. Div., Fort Benning.

Lieutenant Colonel W. B. Augur, relieved Campo, Calif., assigned Cav. Repl. Center, Fort Riley, Kans.

Lieutenant H. C. Baker, relieved Cav. R. C.; assigned Cav. Sch., Fort Riley, Kans.

Lieutenant Colonel F. H. Barnhart, relieved O. R., 6th C. A., Champaign, Ill., December 5; assigned 3d Cav. Brig., Fort Riley.

Lieutenant Colonel H. W. Benson, relieved Canon City High School, Colorado, March 1; assigned 7th C. A. Service Command, Fort Meade, S. Dak.

Lieutenant Colonel Frank E. Bertholet, from Pasadena, Calif., to 4th Corps Area Serv. Command, Camp Claibourne, La., sail San Fran., 12 April.

Captain P. H. Bethune, relieved Hq. and Hq. Co., 1st Armored Brigade, Fort Knox, March 25; assigned as instructor, C. and G. S. School, Fort Leavenworth.

Second Lieutenant J. E. Bickerton, relieved Fort Riley; assigned Philippine Islands, sailing from San Francisco, March 15.

Lieutenant W. H. Boyd, Jr., relieved Fort Knox, Ky., assigned A. F. Sch. Observation Av., Brook's Field.

Lieutenant Harry Bullock relieved Fort Knox, Ky., assigned A. F. Sch. Observation Av., Brook's Field.

Lieutenant W. L. Calhoun, relieved 3rd Cav., assigned 4th Cav. Brig., Fort Riley, Kans.

Lieutenant E. W. Callihan, relieved present duty; assigned Cav. Sch., Fort Riley, Kans.

Lieutenant L. S. Carson, relieved 3d Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

Lieutenant Colonel C. R. Chase, relieved Oklahoma Military Academy, Claremore; assigned Cav. School Det., Fort Riley.

Major C. C. Clendenen, relieved Augusta Military Academy, Fort Defiance, Va.; assigned as military attaché and military attaché for air, Caracas, Venezuela; to report in office, A. C. of S., G-2, Washington, D. C., December 15, for temporary duty.

Captain K. G. Clow, relieved 6th Cav.; assigned 2nd Armored Div., Fort Benning, Ga.

Lieutenant Colonel L. H. Collins, relieved Fort Bliss, March 8; to proceed home and await retirement.

Major F. Del Comfort, relieved Fort Myer, Va.; assigned as instructor, C. and G. S. Sch., Fort Leavenworth, Kans.

Lieutenant Colonel C. B. Cox, relieved as instructor, Wyoming N. G., Cheyenne, Mar. 10; assigned 115th Cav., Fort Lewis.

Lieutenant A. G. Crist, relieved 2nd Armored Div., Fort Benning, Ga.; assigned Cav. Repl. Center, Fort Riley, Kans.

Lieutenant Colonel G. P. Cummings, relieved Polytch. High Sch. and Jr. College, Riverside, Calif.; assigned Armd. Force R. C., Fort Knox; sailing from San Francisco to New York, April 12.

First Lieutenant R. B. Curtiss, relieved office, C. of S., Washington, D. C., February 18; assigned Cav. Repl. Center, Fort Riley.

Lieutenant Colonel J. F. Davis, relieved detail as member of G. S. C., assignment to G. S. with troops, and Hq., 2d C. A., Governors Island; assigned Armored Force; Fort Knox.

Lieutenant G. D. Dawson, relieved Cav. R. C.; assigned Cav. Sch., Fort Riley, Kans.

Lieutenant Wm. L. Delaney, assigned 10th Cav., Fort Leavenworth, Kans.

Lieutenant Colonel A. J. de Lorimier, relieved Univ. of Illinois, Champaign, March 12; assigned 1st Armored Div., Fort Knox.

Captain J. L. DePew, relieved 1st Cav., Fort Bliss, February 19; assigned staff, Cav. School, Fort Riley.

Colonel M. A. Devine, Jr. (Lieut. Col.), temporary appointment as colonel, Army of the U. S., terminated on arrival in U. S.; relieved detail as member of G. S. C., assignment G. S. with troops, and as mil. att. and mil. att. for Air to Paraguay; assigned 4th Div., Fort Meade, S. D.

First Lieutenant S. W. Downey, Jr., relieved 11th Cav., Seeley, Calif., March 7; assigned 3d Cav. Brig., Fort Riley.

Lieutenant Colonel E. F. Dukes, detailed as parole officer for U. S. Dis. Bks., Fort Leavenworth; Lieutenant Colonel E. A. Everitt, Jr., relieved.

Lieutenant H. W. Dune, relieved 3rd Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

Lt. Jack McK. Dunlap, Jr., relieved 3rd Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

Captain E. C. Dunn, relieved 4th Cav., Fort Meade, S. Dak.; assigned staff, Cav. School, Fort Riley.

Colonel H. M. Estes, relieved 4th Cavalry, Fort Meade, S. D.; assigned W. D., Bu. of Public Relations, Washington, D. C.

Lieutenant J. G. Farmer, Jr., relieved present duty; assigned Cav. School, Fort Riley, Kans.

Lieutenant Colonel P. C. Febiger, relieved as instructor Wyoming N. G., Cheyenne, March 11; assigned 11th Cavalry, Seeley, Calif.

Second Lieutenant P. R. Fennig, relieved 2d Cav., Fort Riley; assigned 1st Armored Div., Fort Knox.

First Lieutenant David McC. Flournoy III, from Ft. Riley, Kans., to War Dept., Bureau of Pub. Relations, Washington, D. C.

Major H. M. Ford, relieved 1st Cav. Div., Fort Clark, Texas; assigned to 2nd Armored Div., Fort Benning, Ga.

Lieutenant Colonel H. W. Forster, relieved Mattoon High School, Ill., June 1; assigned 1st Armored Div., Fort Knox.

First Lieutenant J. E. Fowler, relieved Brooks Field; assigned March Field.

Lieutenant Colonel E. A. Franklin, relieved 14th Cav., Fort Riley, March 1; assigned 9th C. A. Service Command, Fort Worden.

Captain J. F. Franklin, Jr., relieved Hq. 7th C. A., Omaha, and temporary duty at C. and G. S. School, Fort Leavenworth; assigned staff, Cav. School, Fort Riley.

Lieutenant Colonel Geoffrey Galwey, assigned as C. O. of troops, USAT Roosevelt, effective upon reporting for duty at New York Port of Embarkation.

Major Alex George, relieved, El Centro, California; assigned Cav. Repl. Center, Fort Riley, Kansas.

2d Lieutenant J. A. George, relieved Fort Riley; assigned Philippine Islands, sailing from New York, April 2.

Lieutenant J. P. Gerald, assigned 10th Cav., Fort Leavenworth, Kans.

Lieutenant A. R. Giesen, relieved 3rd Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

Lieutenant Colonel R. MacD. Graham, relieved Kansas City high schools, Mo., January 18; assigned Q. M. C. at Kansas City, Q. M. Depot; previous orders revoked.

Captain P. B. Griffith, relieved A. C. A. F. School, Moffitt Field; assigned A. C. A. F. School, Stockton, Calif.

Major J. C. Groome, relieved detail as member of G. S. C., assignment to G. S. with troops, and will report to Commanding General, 28th Division, for duty.

Lieutenant Colonel G. B. Guenther, detailed as member of G. S. C.; assigned W. D. G. S., and office, C. of S., Washington, D. C.; relieved post Hq., Cavalry School, Fort Riley; previous orders revoked.

First Lieutenant J. A. Guimond, relieved 107th Cavalry, Cleveland, Ohio; assigned with J.A.G.D., and J.A.G.O., Washington, D. C.

Lieutenant C. D. Hamner, relieved, 3rd Cav., assigned 4th Cav. Brig., Fort Riley, Kans.

Captain L. F. Harris, relieved 9th C. A. Service Command, Fort MacArthur; assigned Cavalry R. C., Fort Riley.

Captain W. O. Heacock, assigned 10th Cav., Fort Leavenworth, Kans.

Lieutenant Colonel T. J. Heavey, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., VII Army Corps, Birmingham, Ala.; relieved 6th Cav., Fort Oglethorpe.

First Lieutenant L. C. Herkness, Jr.; orders amended to assign him 2d Armd. Div., Fort Benning.

Lieutenant Colonel Frederick Herr, relieved detail in I. G. D., March 8, and Hawaiian Dept.; assigned 11th Cav., Camp Seeley, Calif.; previous orders revoked.

Captain William B. Hope, from C.A.S.C, to 6th Cav., Ft. Oglethorpe, Ga.

Captain F. L. Howley, relieved as A. C. supervisor, Civilian Mechanics' School, Rising Sun Aircraft School, Philadelphia; assigned staff, Cavalry School, Fort Riley.

Lieutenant Colonel C. G. Hutchinson, relieved Fort Bliss, Texas; assigned 1st Armd. Div., Fort Knox, Ky.

Captain J. L. Inskeep, relieved U.S.M.A., West Point, N. Y.; assigned 1st Armd. Div., Fort Knox, Ky.

First Lieutenant George S. Iredell, from Fort Myer, Va., 19 March; to 4th Cav. Brig., Fort Riley, Kans.

Lieutenant Colonel W. R. Irvin, relieved C.C.C., Fort Oglethorpe, March 26; assigned 1st Cavalry Div.

Major E. C. Johnston, relieved 1st Cavalry Div., Fort Bliss, March 20; assigned Cavalry Board, Fort Riley.

Lieutenant E. R. Jones, relieved 2nd Armd. Div., Fort Benning, Ga.; assigned Cav. Repl. Center, Fort Riley, Kans.

Major M. E. Jones' orders amended to assign him post Hq., Cav. Sch., Fort Riley.

First Lieutenant Joseph H. Keller, from Fort Meyer, Va., 19 March, to 4th Cav. Brig., Fort Riley, Kans.

Lieutenant Colonel A. T. Lacey, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., Northeast Air Dist., Mitchel Field; relieved O. R., 2d Cav., Albany, N. Y.

Lieutenant Colonel K. C. Lambert, relieved O. R., 2d C. A., New York City, February 1; assigned 14th Cav., Fort Riley.

Lieutenant Colonel I. I. Lambert, relieved Chicago high schools, March 3; assigned 1st Armd. Div., Fort Knox.

Lieutenant Colonel T. F. Limbocker, relieved O. R., 6th C. A., Detroit; detailed O. R., 2d C. A., New York City.

Captain N. A. Loeb, relieved 1st Armored Div., Fort Knox, and temporary duty at Alabama Inst. of Aero., Tuscaloosa; assigned A. C. Basic Flying School, Montgomery, February 13.

Lieutenant Colonel J. W. McDonald, relieved Army War College, February 12; assigned Armored Force Repl. Center, Fort Knox.

First Lieutenant Stephen McGregor, relieved Fort Hayes, March 5; assigned 3d Cav. Brig., Fort Riley.

Lieutenant Colonel L. LeR. Martin, relieved First Cav. Div., Fort Bliss; assigned 1st Armd. Div., Fort Knox.

2d Lieutenant Raymond H. Martin, from 3rd Cav., to Cav. Det., Fort Myer, Va.

Lieutenant Colonel G. R. Mauger's orders amended to relieve him Houston high schools, Texas, March 15.

Major W. B. Mershon, Jr., relieved O. R., 6th C. A., Saginaw, Mich., April 1; assigned staff, Cav. Sch., Fort Riley.

Lieutenant C. L. Miller, assigned 10th Cav., Fort Leavenworth, Kans.

Major R. G. Mills, relieved O. R., 2d C. A., New York City; assigned Cav. Repl. Center, Fort Riley.

Lieutenant Colonel J. G. Monihan, detailed as member of G. S. C.; assigned G. S. with troops, and Philippine Islands, sailing from San Francisco, April 26; relieved Ignatius High School, San Francisco.

Major C. E. Morrison relieved 6th Cav., Fort Oglethorpe; assigned Armd. Force, R. C., Fort Knox.

Captain R. E. Nelson, relieved 3rd Cav.; assigned 2nd Armd. Div., Fort Benning, Ga.

Captain R. E. O'Brien, Jr., relieved 4th Cav., Fort Meade, S. Dak., February 20; assigned 1st Armored Div., Fort Knox.

Colonel Edwin O'Connor, relieved O. R., 2d C. A., New York City, February 20; assigned 2d C. A. Service Command, Fort Hancock.

Captain D. M. Oden, assigned 10th Cav., Fort Leavenworth, Kans.

Major R. D. Palmer, relieved 4th Div., Fort Benning; assigned 4th Cav., Fort Meade, S. Dak.

Colonel L. S. N. Phillipp, relieved Fort Knox, Ky.; assigned as instructor, C. & G. S. Sch., Fort Leavenworth, Kans.

Lieutenant Colonel Otis Porter, from Chicago, Ill., March 17, to 1st Corps Area Serv. Command, Camp Edwards, Mass.

1st Lieut. L. B. Powell, relieved Langley Field; assigned Bowman Field, Ky.

Captain C. LaV. Rickenbaugh, 2nd Div.; assigned 2nd Armd. Div., Fort Benning, Ga.

Major J. H. Riepe, relieved Fort Custer, Mich.; assigned as instructor, C. & G. S. Sch., Fort Leavenworth, Kans.

Captain T. S. Riggs, relieved office, C. of Cav., Washington, D. C.; assigned office, Asst. Sec. of War, Washington, D. C.

Lieutenant Colonel T. M. Roemer, relieved O. R., 3d C. A., Altoona, Pa., March 1; detailed O. R., 3d C. A., Philadelphia.

First Lieutenant J. LeR. Rogers, relieved First Cav. Div., Fort Brown, February 20; assigned 2d Armored Div., Fort Benning.

First Lieutenant Thomas J. Rogers, from Fort Knox, Ky., to 6th Cav., Fort Oglethorpe, Ga.

Lieutenant Colonel H. M. Rose, relieved Owensboro High School, Kentucky, March 10; assigned 2d Armored Div., Fort Benning.

Lieutenant Colonel F. H. L. Ryder, relieved O. R., 3d C. A., Dubois, Pa., February 25; assigned 7th C. A. Service Command, Fort Leonard Wood, Mo.

Captain K. L. Scherer, relieved U. S. M. A., West Point, N. Y.; assigned 1st Armd. Div., Fort Knox, Ky.

Lieutenant F. T. Schneider, Jr., relieved present duty, Cav. School, Fort Riley, Kans.

Lieutenant Colonel John P. Scott, from Phoenix, Ariz., to 2nd Armored Div., Fort Benning, Ga., sail San Fran., April 12.

First Lieutenant J. A. Seay, relieved Fort Oglethorpe; assigned Philippine Islands, sailing from Charleston, April 4.

Major J. K. Sells, relieved 1st Armored Div., Fort Knox; assigned as instructor, C. and G. S. School, Fort Leavenworth.

Captain L. C. Shea, relieved 3d Div., Fort Lewis, February 25; assigned 9th Cav., Fort Riley.

Captain C. H. Shepherd, relieved Fort Oglethorpe, February 28; assigned Langley Field.

Lieutenant Colonel W. E. Shipp, G. S. C., relieved W.D.G.S. and office, C. of S., Washington, D. C.; assigned G. S. with troops, Mar. 6, and as mil. att., Belgrade, Yugoslavia.

Major C. D. Silverthorne detailed as member of G. S. C.; assigned W.D.G.S., and office, C. of S., Washington, D. C.; relieved 3d Cav. Brig., Fort Riley.

Lieutenant G. K. Slaughter, relieved 3d Cav.; assigned 4th Cav. Brig., Fort Riley, Kans.

First Lieutenant W. L. Slisher's orders amended to relieve him Fort Custer, instead of Fort Sheridan.

Captain J. W. Snee, relieved 11th Cav., Campo, Calif., February 20; assigned 2d Armored Div., Fort Benning.

Lieutenant Colonel Kramer Thomas, from Philadelphia, Pa.. to 2nd Armored Div., Fort Benning, Ga.

Lieutenant Colonel P. L. Thomas, relieved detail in I. G. D., December 15; relieved Hq., 1st C. A., Boston; assigned 1st Armored Div., Fort Knox.

Lieutenant Colonel J. B. Thompson, relieved as instructor, C. and G. S. School, Fort Leavenworth; assigned 1st Armored Div., Fort Knox.

First Lieutenant J. C. F. Tillson 3d, relieved 1st Cav. Div., Fort Ringgold, and Ryan School of Aero., San Diego; assigned A. C. Basic Flying School, Moffitt Field, Feb. 13.

Lieutenant Colonel L. K. Truscott, Jr., detailed as member of G. S. C.; assigned G. S. with troops, and Hq., IX Army Corps, Fort Lewis; relieved 1st Armored Div., Fort Knox.

Lieutenant J. E. Tyler, assigned 10th Cav. Det., Fort Leavenworth, Kans.

Lieutenant Colonel T. D. Wadelton, relieved O. R., 5 C. A., Indianapolis, December 1; assigned C. C. C., Fort Knox.

Lieutenant Colonel W. S. Wadelton, ordered to participate in aerial flights, period of one month, March 12.

Lieutenant Colonel Otto Wagner, relieved O. R., 6th C. A., Milwaukee, March 1; assigned 4th C. A. Service Command, Camp Polk, La.

Captain C. P. Walker, assigned 10th Cav., Fort Leavenworth, Kans.

Captain William Ambler Weaver, National Guard U. S., to active duty with Ordnance Dept., March 13, to off. C. of Ord., Washington, D. C.

Major J. B. Wells, relieved staff, Cavalry School, Ford Riley, March 15; assigned 1st Armored Div., Fort Knox.

Col. W. W. West, relieved as instructor, New Jersey N. G., Newark; assigned 3d C. A. Service Command, Fort Monroe.

Captain H. R. Westphalinger, transferred to Ord. Dept., on November 16; relieved staff, Cavalry School, Fort Riley; assigned as ordnance officer, that station, and as ordnance member of Cavalry Board.

Lieutenant Colonel Melvin S. Williamson, from Decatur, Ga., June 1, to 2nd Armored Div., Fort Benning, Ga.

Major A. N. Willis, relieved Shreveport high schools, La., April 1; assigned 11th Cav., Seeley, Calif.

Lieutenant Colonel R. E. Willoughby, detailed as member of G. S. C.; assigned G. S. with troops, and Hq., Panama C. A. Command, Quarry Heights; relieved 3d Cav., Fort Myer, sailing from New York, May 20.

Captain A. H. Wilson, Jr., relieved A. C. A. F. Sch., Moffitt Field; assigned A. C. A. F., Stockton, Calif.

First Lieutenant Joseph Woodall, relieved Randolph Field, March 12; assigned Cuero, Texas.

Lieutenant Colonel R. O. Wright, relieved O. R., 3d C. A., Norfolk, March 3; assigned 2d Armd. Div., Fort Benning.

Major W. W. Yale, relieved staff, Cavalry School, Fort Riley, March 8; assigned 4th Cav., Fort Meade, S. Dak.

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CAVALRY OFFICERS (RETIRED)
On Active Duty

Captain Sam D. Carter, Pasadena Junior College, ROTC, Pasadena, Calif.

Major Roy W. Holderness, Shreveport high schools, Shreveport, La.

Major Richard H. Kimball, CCC, Fort Oglethorpe, Ga.

First Lieutenant Irving L. McAlister, CASC, Jeffersonville, Mo.

Major Vernon L. Padgett, CASC, Fort Des Moines, Iowa.

Colonel Albert E. Phillips, Jeffersonville Quartermaster Depot, Jeffersonville, Ind.

Captain Horace Stringfellow, Jr., Montgomery high schools, Montgomery, Ala.

NOTE—*This list is in addition to that published in our January-February 1941, issue. It is requested that any retired cavalryman who is now on active duty and whose name does not appear on this list, please notify* THE CAVALRY JOURNAL *or the Office, Chief of Cavalry.*

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